A Spring Flora of Northwestern Oregon

Helen M. Gilkey

Thelma Post → Peter Ryan

A Spring Flora *of* Northwestern Oregon

By

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There's a charming spot by a wood-land brook,
Where wild flowers grow in a shady nook,
While the wild-wood echoes all day long,
With the silver notes of the thrush's song.

—J. A. G.

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Introduction

The geographical situation of Oregon and its peculiar topography, have been favorable to the establishment of a varied flora. The division of the state from north to south by the Cascades, giving it a widely different climate east and west of the mountains, contributes to this variability, as does its latitude. Lying midway between the typical floras of the colder north and the warmer south, it receives contributions from both, many species overlapping in Oregon, and the northern types continue southward down the backbone of mountains.

Through the state are wide extremes of soil conditions, exposure, temperature, moisture relations, and other factors which favor distribution of life. The presence of the sea as a boundary means an attending sand dune flora, salt marsh flora, salt water flora, and a host of species not so directly dependent upon the ocean but responding to its influence.

The boundaries of the area covered in the following pages have been rather arbitrarily selected, but they include a somewhat natural unit, from the summit of the Cascades to the coast line, and from the southern limit of Lane County to the Columbia. This unit is occupied largely by the Willamette River system with the addition of a section of the Coast Range and its seaward slope. Throughout this area, except in specialized localities such as mountain tops and sea beaches, a general uniformity in the vegetation is apparent.

Texts on Northwestern Plants

Texts dealing with the plants of Oregon are: Flora of Northwest America by Howell (now out of print); Key and Flora of the Common Flowers of Oregon by Sweetser and Kent (out of print); Flora of the Northwest Coast by Piper and Beattie, published by the New Era Printing Co.; and Northwest Flora by Frye and Rigg, published by the University of Washington. An

Illustrated Flora of the Pacific States by Professor Leroy Abrams of Stanford University, is being issued in three large volumes, the first of these, including members of the plant kingdom from ferns to birthworts, having already appeared. The above named books are all carefully prepared and are of great value to the student with some training and the advantage of class instruction. Another book which will be welcomed eagerly is a flora of Oregon now reported to be in process of preparation, by a well-known botanist who is thoroughly familiar with the plants of the state.

The object of the present manual is to provide a brief non-technical key to the spring flora of Northwestern Oregon, one which can be used by the amateur in botany, working alone, and by the elementary student. It has been the aim to reduce the use of technical terms to a minimum. Certain of these terms, however, are unavoidable, and a glossary preceding the index has been added to explain the unfamiliar words.

Most of the common plants of the region previously defined, which blossom before July, are included. Those which, though abundant in certain sections are strictly local in distribution, are for the most part, though not always, omitted. Omitted, too, are those groups in which the beginner finds it difficult to separate species, such as the grasses, sedges, rushes, and willows.

Development of Plant Classification

The development of botany as a science was coincident in its beginning with that of medicine. Plants were early employed as remedies for various ills; and as a knowledge of disease and its cure grew more specific, it was natural that some attempt at classification of the plants employed, should be made.

From the beginning of man's existence upon the earth, plants and animals have been given common names which are useful locally. The difficulty of such a system lies in the fact that these names are purely local, and a spring-beauty, for example, in Virginia may be a very different plant from the spring-beauty of Oregon. In various localities of the same state, even, we find a particular plant designated by different names, with much resulting confusion.

For the purpose of uniformity, therefore, so-called "scientific" or "technical" Latin names have been adopted.

A Latin name as commonly used is a binomial, that is, it consists of two names used together, the genus or generic name preceding the species or specific. Thus our common maple is known

as *Acer macrophyllum* Pursh (genus, *Acer;* species, *macrophyllum;* and Pursh the name of the man who established the species). *Acer macrophyllum* Pursh belongs to the family *Aceraceae.* A family name always begins with a capital and ends in *ae;* a generic name begins with a capital but does not end in *ae;* and a specific name, as generally used, begins with a small letter.

This system of Latin names has become the official one of the world.

Unfortunately, however, there is still confusion, due to the great number of species in the world (It is estimated that there are between 120,000 and 150,000 known species of flowering plants); due also to the fact that botanists from all over the world are working independently on the classification of these; and due to the difficulty each botanist finds in acquainting himself with the immense amount of literature published in many languages on these species.

Various botanical congresses have met to correct the situation and establish a nomenclature (system of naming) on a stable foundation. The International or Vienna Code, adopted in 1905, has been accepted widely by botanists of the world, including many of those in America. A group, however, of American botanists who had proposed what they considered a code of simplified rules which was rejected at Vienna, continued with their own system to which they had become accustomed and which came to be known as the American Code. In this country at the present time, each code has its adherents among our prominent botanists; and the student will find that the classification in Gray's Manual, for example, will not agree in all particulars with that of Britton and Brown's Illustrated Flora. Further congresses will attempt to unite the two groups under a commonly acceptable system. It is impossible here to state in detail the difference between the two, but the present manual is following the International Code.

How to Identify Plants

A study of the key which follows will show that classification of plants is based largely on flower characters. Other parts are often essential, however, and a good botanical specimen includes the whole plant. A hand lens is desirable in identification, and inexpensive ones which are entirely satisfactory can now be obtained.

The illustrated explanatory diagrams figuring plant parts and modifications, should be studied carefully, and the glossary consulted often for the meaning of unfamiliar terms.

How the key is used may be illustrated by a common plant like Scotch broom. Starting at the beginning, compare **A** on page 15 with **A** on page 17, and the plant is found to fall under the second **A.** Now compare the 2 **a**'s under **A.** The first is found to agree with the plant, but under this, the first **b** does not fit the case. The second **b** is right, and the second **c** under it. Under **c** the second **d** is chosen, the first **e**, and the first **f**, which leads us to the technical name, *Cytisus scoparius.* The student should now turn to the page indicated and carefully read the description there, to verify his diagnosis. Preceding the description of the species is a description of the genus, *Cytisus,* and of the family, Leguminosae, the family name in the text always appearing in capitals. These should also be read, for one of the most interesting things to learn about plants is their relationships.

Every letter in the key will be found to have a double, and occasionally a letter may be repeated three or even four times when wide variation exists. Each letter should be consulted if there is any doubt concerning the placing of the plant.

The arrangement of the key is entirely artificial, and no attempt is made there to indicate relationships. However, in the body of the text the families, genera, and species are placed in their order of development, as understood at present by a large school of botanists. There is a question regarding the position of certain groups of plants and their origin, but that is of no especial concern in an elementary text.

Acknowledgments

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—H. M. G.

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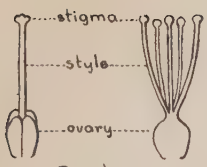
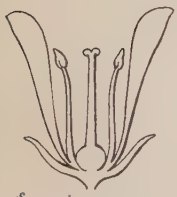
The Flower



Pistils

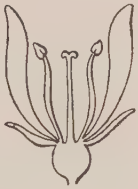
Stamens

Irregular flower



Superior ovary

Half-inferior ovary



Inferior ovary

Types of ovule attachment

parietal

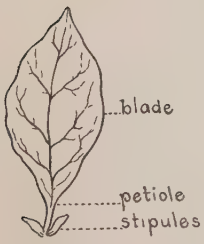
axile

free-central

basal ovule

suspended ovule

The Leaf



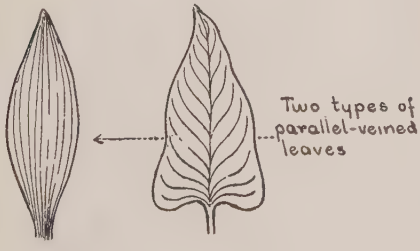


PLATE I

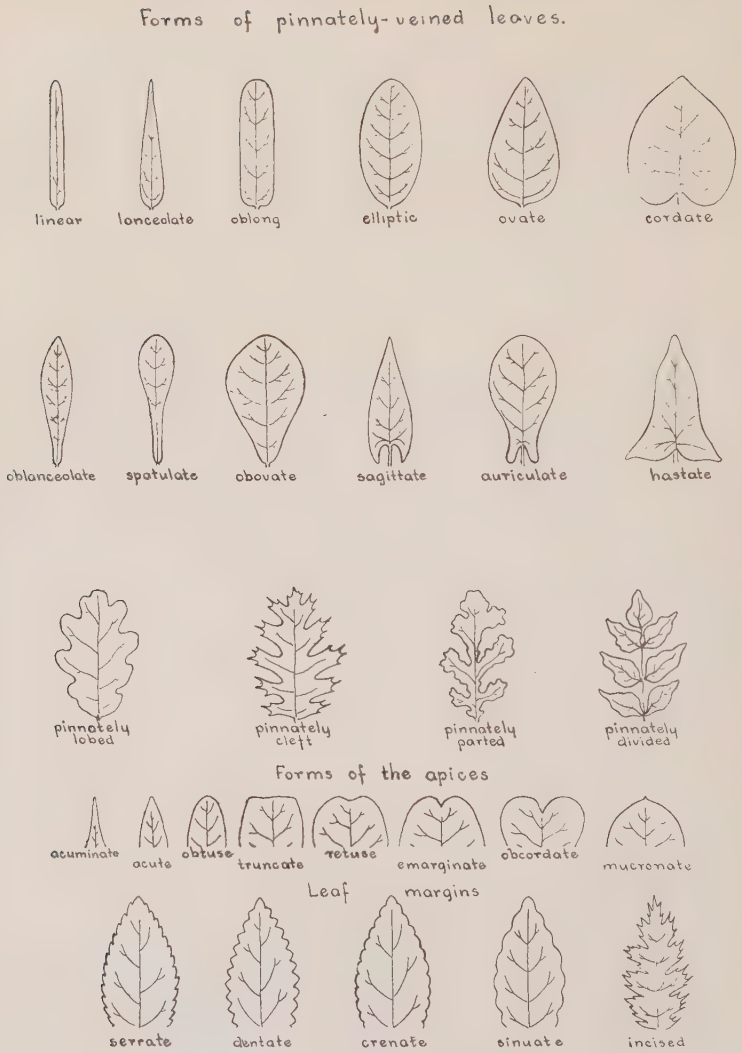

Forms of pinnately-veined leaves.
linear
lanceolate
oblong
elliptic
ovate
cordate
oblanceolate
spatulate
obovate
sagittate
auriculate
hastate
pinnately lobed
pinnately cleft
pinnately parted
pinnately divided
Forms of the apices
acuminate
acute
obtuse
truncate
retuse
emarginate
obcordate
mucronate
Leaf margins
serrate
dentate
crenate
sinuate
incised

PLATE II

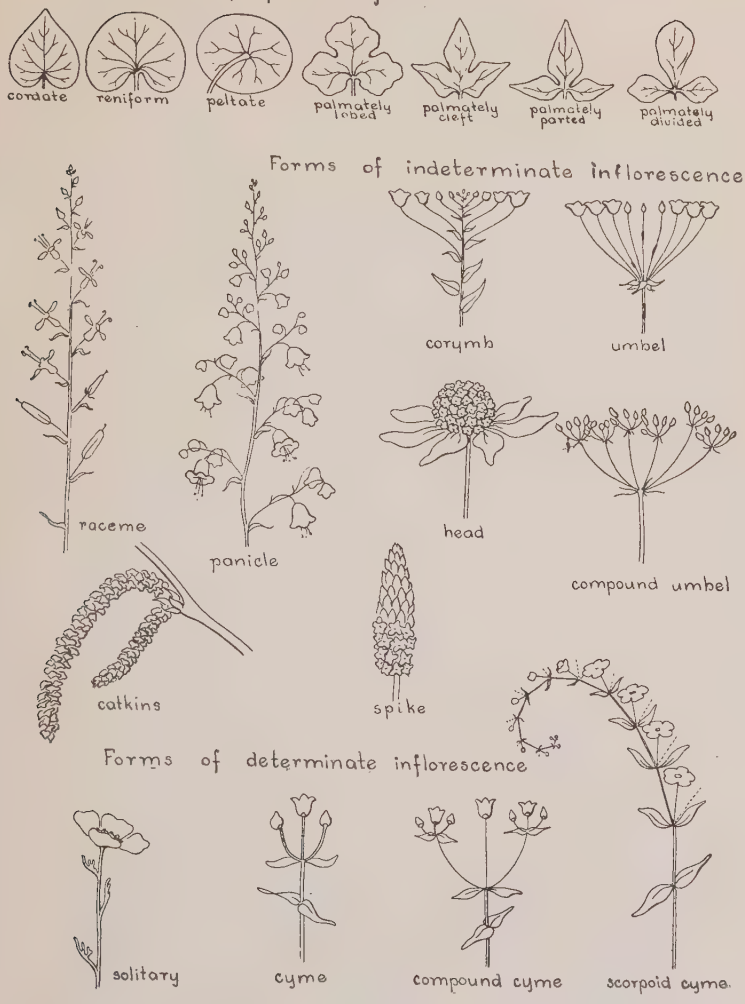
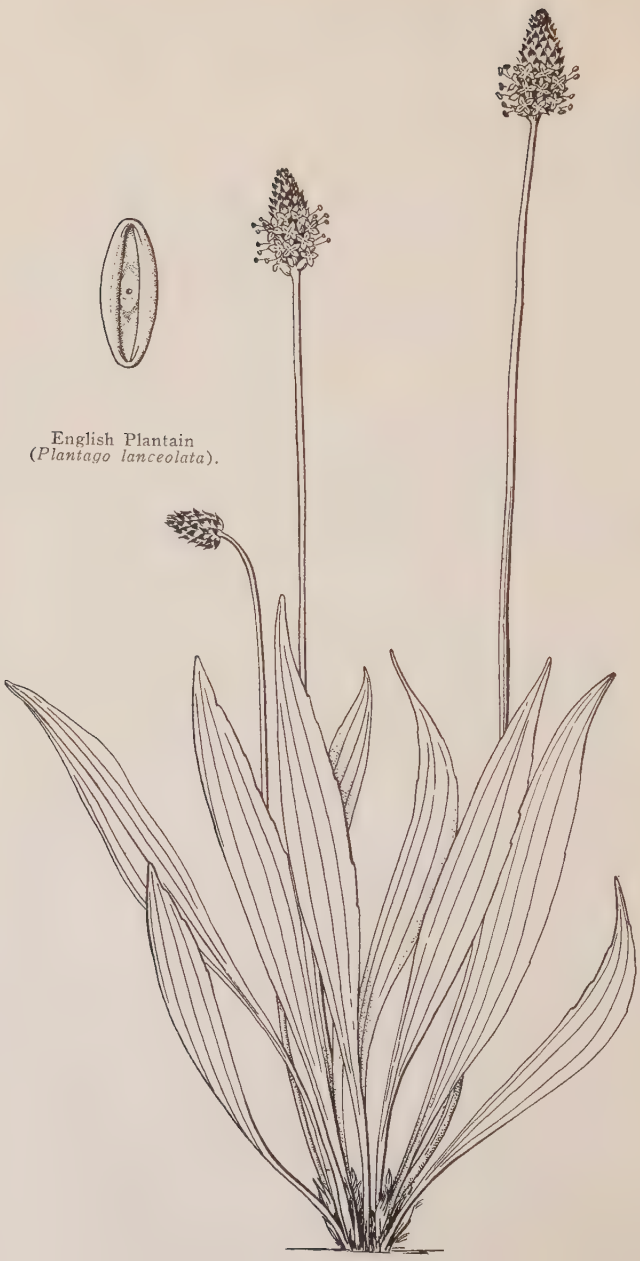

Forms of palmately-veined leaves.
cordate
reniform
peltate
palmately lobed
palmately cleft
palmately parted
palmately divided
Forms of indeterminate inflorescence
raceme
panicle
corymb
umbel
head
compound umbel
catkins
spike
Forms of determinate inflorescence
solitary
cyme
compound cyme
scorpoid cyme.

PLATE III



English Plantain
(*Plantago lanceolata*).

Analytical Key

A. **MONOCOTYLEDONS.** Plants with 1 seed-leaf, and generally with parallel-veined leaves, flower parts in 3's, and vascular bundles scattered irregularly through the stem.

a. Ovary superior. *Page*
b. Plants with bulbs or corms.
c. Leaves all appearing basal. Sepals and petals alike.
d. Stamens 6, 3 anther bearing.....Ookow. **BRODIAEA PULCHELLA**, 5.
d. Stamens 6, all anther-bearing.
e. Flowers in umbels.
f. Sepals and petals partly united.
g. Flowers blue.....Blue dicks. **BRODIAEA CAPITATA**, 5.
g. Flowers white with green mid-rib.
White cluster-lily. **BRODIAEA HYACINTHINA**, 6.
f. Sepals and petals not united.
g. Flower stem flattened....Alpine onion. **ALLIUM CRENULATUM**, 4.
g. Flower stem not flattened.
Common wild onion. **ALLIUM CERNUUM**, 5.
e. Flowers in racemes or solitary.
f. Flowers blue or purple.
g. Perianth segments arranged regularly, twisting together after flowering.....Large camass. **CAMASSIA LEICHTLINII**, 4.
g. One perianth segment turning downward, the others turning upward, each twisting separately after flowering.
Small camass. **CAMASSIA QUAMASH**, 4.
f. Flowers not blue or purple.
g. Sepals and petals cream with orange base.
Fawn lily. **ERYTHRONIUM GIGANTEUM**, 7.
g. Sepals and petals pink.
Pink coast adder's tongue. **ERYTHRONIUM REVOLUTUM**, 7.
g. Sepals and petals deep yellow.
Yellow adder's tongue. **ERYTHRONIUM PARVIFLORUM**, 7.
c. Leaves both basal and on the stem.
d. Sepals and petals alike.
Death camass. **ZYGADENUS VENENOSUS**, 2.
d. Sepals and petals unlike.....Cat's ear. **CALOCHORTUS TOLMIEI**, 6.
c. Leaves all in whorl on stem, or some alternate, none basal.
d. Flowers reddish-orange, spotted with purple.
Tiger lily. **LILIUM COLUMBIANUM**, 8.
d. Flowers white, becoming pinkish.
Cascade lily. **LILIUM WASHINGTONIANUM**, 8.
d. Flowers brownish or greenish.
Rice-root lily. **FRITILLARIA LANCEOLATA**, 8.
b. Plants with rootstocks.
c. Leaves all appearing basal.
d. Flower stem solitary, bearing 1 or rarely 2 white flowers.
CLINTONIA UNIFLORA, 12.
d. Flower stems generally several, each bearing 1 brownish inconspicuous flower.....Fetid adder's tongue. **SCOLIOPUS HALLII**, 12.
c. Leaves both basal and on the stem, gradually shortening upward.
Bear-grass. **XEROPHYLLUM TENAX**, 2.
c. Leaves all on the stem above ground, none basal.

Page

d. Leaves alternate.
e. Flowers solitary in the leaf axils.
Twisted-stalk. STREPTOPUS AMPLEXIFOLIUS, 9.
e. Flowers in racemes.
f. Perianth segments 4.....Wild lily of the valley.
MAIANTHEMUM BIFOLIUM var. KAMTSCHATICUM, 11.
f. Perianth segments 6.
g. Leaves spirally arranged, often folded.
SMILACINA STELLATA, 10.
g. Leaves generally 2-ranked, mostly flat.
Small false Solomon's seal. SMILACINA SESSILIFOLIA, 11.
e. Flowers in panicles.
f. Styles 3, separate.
g. Flowers green, drooping.
American white hellebore. VERATRUM VIRIDE, 3.
g. Flowers white, erect.
False white hellebore. VERATRUM CALIFORNICUM, 3.
f. Style 1, 3-cleft at summit.
False Solomon's seal. SMILACINA AMPLEXICAULIS, 11.
e. Flowers 1 or 2, terminal.
f. Style 3-cleft.....Fairy lanterns. DISPORUM SMITHII, 9.
f. Style entire.....Fairy bells. DISPORUM OREGANUM, 10.
d. Leaves borne in whorl of 3 at summit of stem, flower arising from center of whorl.
e. Flower stalked.....Wood lily. TRILLIUM OVATUM, 13.
e. Flower not stalked.....Sessile Trillium. TRILLIUM SESSILE, 13.
a. Ovary inferior.
b. Plants with rootstocks.
c. Plants not green.
d. Flower spurred.
e. Lip of flower spotted.
Spotted coral-root. CORALLORHIZA MACULATA, 18.
e. Lip of flower not spotted.
Purple coral-root. CORALLORHIZA MERTENSIANA, 18.
d. Flower not spurred.
e. Plant white.....Phantom orchis. CEPHALANTHERA AUSTINAE, 17.
e. Plant purple and yellowish.
Striped coral-root. CORALLORHIZA STRIATA, 18.
c. Plants green.
d. Flowers borne on a spadix enclosed by a sathe.
Skunk cabbage. LYSICHITON KAMTSCHATCENSE, 1.
d. Flowers not borne on a spadix.
e. Flowers irregular with distinct lower lip.
Stream orchis. EPIPACTIS GIGANTEA, 16.
e. Flowers not irregular.
f. Sepals and petals alike. Styles not petal like.
g. Flowers blue or purple.
Blue-eyed grass. SISYRINCHIUM IDAHOENSE, 14.
g. Flowers yellow..Golden-eyed grass. HYDASTYLUS BOREALIS, 14.
f. Sepals and petals unlike. Styles petal-like.
Purple iris. IRIS TENAX, 14.
b. Plants with corms.....Angel ..pper. CALYPSO BULBOSA, 15.
b. Plants without corms or rootstocks. Roots fleshy.
c. Flower with large sac-like lip.
Lady's slipper. CYPRIPEDIUM MONTANUM, 15.
c. Lip of flower not sac-like.
d. Leaves 2, opposite, heart-shaped.
Tway-blade. LISTERA CORDATA, 17.

d. Leaves 2, opposite, not heart-shaped. *Page*
Tway-blade. **LISTERA CONVALLARIOIDES**, 17.

A. **DICOTYLEDONS.** Plants with 2 seed-leaves, and generally with netted-veined leaves, flower parts in 4's or 5's, and vascular bundles arranged in concentric layers in the stem.

a. TREES or SHRUBS.
b. Leaves opposite.
c. Leaves simple.
d. Plants parasitic or partially so.
Mistletoe. **PHORADENDRON VILLOSUM**, 22.
d. Plants not parasitic.
e. Ovary free from calyx.
f. Flowers dark red.....Vine maple. **ACER CIRCINATUM**, 84.
f. Flowers greenish..Large-leaved maple. **ACER MACROPHYLLUM**, 84.
e. Ovary united with calyx wholly or only at base.
f. Mature fruit a capsule.
g. Flowers ¼ in. or less broad.
Grease-wood. **CEANOTHUS CUNEATUS**, 86.
g. Flowers 1 in. or more broad.....Mock orange.
PHILADELPHUS LEWISII, var. **CALIFORNICUS**, 57.
f. Mature fruit fleshy.
g. Twining shrub....Climbing honeysuckle. **LONICERA CILIOSA**, 130.
g. Erect or weak shrub or small tree, not twining.
h. Flowers in a dense head, surrounded by petal-like bracts.
Common dog-wood. **CORNUS NUTTALLII**, 95.
h. Flowers not in a dense head nor surrounded by petal-like bracts.
i. Flowers borne in pairs in the leaf-axils.
Twin-berry. **LONICERA INVOLUCRATA**, 131.
i. Flowers not borne in pairs in the leaf-axils.
j. Petals entirely separate.
Creek dog-wood. **CORNUS CALIFORNICA**, 95.
j. Petals united, at least partly.
k. Corolla wheel-shaped, white.
Western wayfaring tree. **VIBURNUM ELLIPTICUM**, 129.
k. Corolla bell-shaped, pink or pink-tinged.
l. Erect shrub. Leaves not hairy.
Snow-berry. **SYMPHORICARPOS ALBUS**, 130.
l. Trailing shrub. Leaves hairy.
Mountain snow-berry. **SYMPHORICARPOS MOLLIS**, 130.
c. Leaves compound.
d. Stamens and pistils on separate trees.
Oregon ash. **FRAXINUS OREGONA**, 104.
d. Stamens and pistils in same flower.
e. Flower cluster dome-shaped..... Red elder-berry.
SAMBUCUS RACEMOSA var. **CALLICARPA**, 128.
e. Flower cluster flat-topped.
Blue elder-berry. **SAMBUCUS GLAUCA**, 128.
b. Leaves alternate.
c. Leaves simple.
d. Stamens and pistils in separate flowers.
e. Staminate flowers in catkins.
f. Deciduous tree.
g. Leaves conspicuously lobed..Garry oak. **QUERCUS GARRYANA**, 20.
g. Leaves not conspicuously lobed.
Oregon alder. **ALNUS OREGONA**, 19.
f. Deciduous shrub.....Hazel. **CORYLUS ROSTRATA**, 20.
f. Evergreen tree or shrub.

g. Both staminate and pistillate flowers in catkins. Fruits fleshy. *Page*
Wax myrtle. MYRICA CALIFORNICA, 21.
g. Pistillate flowers generally not in catkins. Fruit not fleshy.
Chinquapin. CASTANOPSIS CHRYSOPHYLLA, 21.
e. Neither staminate nor pistillate flowers in catkins.
Indian peach. OSMARONIA CERASIFORMIS, 69.
d. Stamens and pistils in same flower.
e. Stems thorny or spiny.
f. Leaves palmately veined and lobed.
g. Flowers in woolly spikes.....Devil's-club. FATSIA HORRIDA, 93.
g. Flowers not in woolly spikes.
h. More than 4 flowers in a cluster.
Swamp currant. RIBES LACUSTRE, 58.
h. 1 to 4 flowers in a cluster.
i. Flowers showy.
j. Fruits gummy from presence of numerous stalked glands.
Gummy gooseberry. GROSSULARIA LOBBII, 60.
j. Fruits spiny.
k. Young shoots prickly.
Prickly-fruited gooseberry. GROSSULARIA MENZIESII, 59.
k. Young shoots not prickly.
Shining-leaved gooseberry. GROSSULARIA CRUENTA, 60.
i. Flowers not showy.
Straggly gooseberry. GROSSULARIA DIVARICATA, 59.
f. Leaves pinnately veined..Hawthorn. CRATAEGUS DOUGLASII, 70.
e. Stems not thorny or spiny.
f. Ovary free from calyx.
g. Flowers greenish, inconspicuous.
Chittim. RHAMNUS PURSHIANA, 85.
g. Flowers white or colored, more or less showy.
h. Petals partly united.
i. Stem prostrate. Creeping shrub.
Kinnikinnic. ARCTOSTAPHYLOS UVA-URSI, 101.
i. Erect tree or shrub.
j. Flowers large, spreading, pink, slightly irregular.
Rhododendron. RHODODENDRON CALIFORNICUM, 98.
j. Flowers small, urn-shaped, regular.
k. Tree.....Madrone. ARBUTUS MENZIESII, 100.
k. Shrub.
l. Flowers rusty-red.
Fool's huckleberry. MENZIESIA FERRUGINEA, 99.
l. Flowers not rusty-red.
m. Calyx becoming large and fleshy in fruit. Bark not red.
Salal. GAULTHERIA SHALLON, 99.
m. Calyx not becoming large and fleshy. Bark red.
Hairy manzanita. ARCTOSTAPHYLOS COLUMBIANA, 100.
h. Petals not united.
i. Mature fruit fleshy.
j. Fruit raspberry-like..Thimble-berry. RUBUS PARVIFLORUS, 62.
j. Fruit cherry-like.
k. Flowers in racemes.
Western choke-cherry. PRUNUS DEMISSA, 69.
k. Flowers in corymbs.
Wild cherry. PRUNUS EMARGINATA var. ERECTA, 69.
i. Mature fruit not fleshy.
j. Flowers very small, in panicles.
k. Flowers red or pink.....Hardhack. SPIRAEA DOUGLASII, 61.
k. Flowers white or cream.
Ocean spray. HOLODISCUS DISCOLOR, 61.

j. Flowers in corymbs. *Page*
k. Leaves pinnately veined, entire.
l. Leaves rusty-woolly beneath.
Rusty Laborador tea. LEDUM LATIFOLIUM, 98.
l. Leaves not rusty-woolly beneath.
Labrador tea. LEDUM COLUMBIANUM, 97.
k. Leaves palmately veined and lobed.
Nine-bark. PHYSOCARPUS CAPITATUS, 61.
f. Ovary united with calyx wholly or only at base.
g. Petals partly united.
h. Leaves thin, deciduous.
i. Fruit red....Red huckleberry. VACCINIUM PARVIFOLIUM, 102.
i. Fruit blue..Western blueberry. VACCINIUM CAESPITOSUM, 101.
h. Leaves leathery, evergreen. Fruit black or bluish.
Common evergreen huckleberry. VACCINIUM OVATUM, 101.
g. Petals not united.
h. Fruit a pome.
i. Flowers in racemes.
Service berry. AMELANCHIER ALNIFOLIA, 70.
i. Flowers in corymbs.....Wild crab-apple. PYRUS RIVULARIS, 70.
h. Fruit a berry.
i. Flowers showy, red.
Red-flowering currant. RIBES SANGUINEUM, 58.
i. Flowers inconspicuous, greenish.
j. Leaves resin-dotted beneath, odor disagreeable.
Stinking black currant. RIBES BRACTEOSUM, 59.
j. Leaves not resin-dotted, without noticeable odor.
Trailing currant. RIBES LAXIFLORUM, 58.
h. Fruit dry, 3-celled.
i. Leaves sticky, fragrant.
Cinnamon bush. CEANOTHUS VELUTINUS, 86.
i. Leaves not sticky, not fragrant.
Oregon tea. CEANOTHUS SANGUINEUS, 86.
c. Leaves compound.
d. Flowers inconspicuous, greenish. Plant poisonous to touch.
Poison oak. RHUS DIVERSILOBA, 83.
d. Flowers white or colored, showy.
e. Flowers yellow.
f. Flowers pea-shaped.....Scotch broom. CYTISUS SCOPARIUS, 73.
f. Flowers not pea-shaped.
g. Leaflets 5 to 11, pinnately veined.
Oregon grape. BERBERIS AQUIFOLIUM, 41.
g. Leaflets 11 to 19, palmately veined.
Mountain Oregon grape. BERBERIS NERVOSA, 41.
e. Flowers not yellow.
f. Fruit raspberry- or blackberry-like.
g. Flowers red or pink. Fruit yellow or red.
Salmon berry. RUBUS SPECTABILIS, 62.
g. Flowers white. Fruit black.
h. Fruit a raspberry, separating from the receptacle.
Black cap. RUBUS LEUCODERMIS, 63.
h. Fruit a blackberry, not separating from the receptacle.
i. Perennial. Leaflets pinnately cleft and sharply incised.
Evergreen blackberry. RUBUS LACINIATUS, 63.
i. Biennial. Leaflets not pinnately cleft, somewhat incised, toothed.
Wild blackberry. RUBUS VITIFOLIUS, 63.
f. Fruit consisting of a fleshy receptacle enclosing several simple pistils.
g. Flowers small, ($\frac{3}{4}$ to $1\frac{1}{4}$ in.). Branches densely clothed with slender straight prickles.....Wood rose. ROSA GYMNOCARPA, 67.
g. Flowers $1\frac{1}{4}$ to 3 in. broad.

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h. Foliage noticeably sweet-scented. Receptacle elongated, generally broadest above middle.....Sweet brier. ROSA RUBIGINOSA, 67.

h. Foliage not noticeably sweet-scented.

i. Stems without prickles except sometimes when young. Receptacle ellipsoid.....ROSA PRINGLEI, 67.

i. Stems armed with prickles.

j. Prickles stout.

k. Prickles straight. Twigs rarely bristly or only slightly so. Common wild rose. ROSA NUTKANA, 66.

k. Prickles curved. Twigs densely hairy and glandular. ROSA DURANDII, 66.

j. Prickles slender.

k. Prickles curved.....ROSA MYRIADENIA, 66.

k. Prickles straight.

l. Receptacle globose with very short neck or none. ROSA PISOCARPA, 67.

l. Receptacle ellipsoid with distinct neck. ROSA EASTWOODIAE, 67.

a. HERBS.

b. Ovary free from calyx.

c. Plants not green....Naked broom-rape. OROBANCHE UNIFLORA, 126.

c. Plants green.

d. Low bog plants which trap insects for food by means of sticky glands on leaves.

e. Leaf blades roundish.....Sun-dew. DROSERA ROTUNDIFOLIA, 50.

e. Leaf blades long. Narrow-leaved sun-dew. DROSERA LONGIFOLIA, 51.

d. Mostly not bog plants. Do not trap insects for food.

e. Stamens and pistils in separate flowers.

f. Staminate and pistillate flowers on same plant. Nettle. URTICA LYALLII, 22.

f. Staminate and pistillate flowers on different plants .

g. Leaves simple with ear-like lobes at base of blade. Red sorrel. RUMEX ACETOSELLA, 26.

g. Leaves compound with many small leaflets.

h. Flowers reddish or greenish, inconspicuous. Meadow rue. THALICTRUM OCCIDENTALE, 37.

h. Flowers white, in showy clusters. Goat's beard. ARUNCUS SYLVESTER, 62.

e. Stamens and pistils in same flower.

f. Petals absent, the sepals sometimes petal-like.

g. Leaves alternate.

h. Flowers in dense terminal spikes.

i. Leaves simple with sheathing stipules. POLYGONUM BISTORTOIDES, 25.

i. Leaves compound without sheathing stipules. Burnet. SANGUISORBA ANNUA, 68.

h. Flowers not in dense spikes.

i. Flowers greenish, 1 or few in the leaf axils.

j. Leaves palmately lobed.....ALCHEMILLA ARVENSIS, 68.

j. Leaves entire.....Knot weed. POLYGONUM AVICULARE, 25.

i. Flowers greenish or colored, in racemes or panicles.

j. Flowers red or pink. Smart weed. POLYGONUM PERSICARIA, 24.

j. Flowers greenish.

k. Plant commonly white-mealy. Pig weed. CHENOPODIUM ALBUM, 27.

k. Plant not white-mealy. *Page*
l. Inner sepals with slender teeth.
Bitter dock. **RUMEX OBTUSIFOLIUS**, 26.
l. Inner sepals entire.
m. Leaves heart-shaped at base, margins not crisped. Sepals without large callous grains.
Western dock. **RUMEX OCCIDENTALIS**, 25.
m. Leaves not heart-shaped at base, margin crisped. Sepals with at least 1 large callous grain.
Curly dock. **RUMEX CRISPUS**, 26.
g. Leaves not alternate, or if so, all appearing basal.
h. Leaves basal.
i. Leaf solitary.....Vanilla leaf. **ACHLYS TRIPHYLLA**, 42.
i. Leaves many.....White marsh marigold. **CALTHA BIFLORA**, 34.
h. Leaves not all basal.
i. Stem leaves whorled.
j. Stem leaves simple....Wind flower. **ANEMONE DELTOIDEA**, 37.
j. Stem leaves divided into 3 to 5 leaflets....Small wind flower.
ANEMONE QUINQUEFOLIA var. **GRAYI**, 37.
f. Petals present, free or united.
g. Leaves all or mostly basal.
h. Leaves simple.
i. Main veins of leaf several, palmate.
j. Plants with tubers....**ROMANZOFFIA UNALASCHENSIS**, 111.
j. Plants without tubers.
Spring queen. **SYNTHYRIS ROTUNDIFOLIA**, 122.
i. Main veins of leaf several, parallel.
j. Leaves long, narrow.
English plantain. **PLANTAGO LANCEOLATA**, 126.
j. Leaves broad....Broad-leaved plantain. **PLANTAGO MAJOR**, 126.
i. Main vein of leaf 1, pinnately branched.
j. Water plants, flowers yellow.
Pond lily. **NYMPHAEA POLYSEPALA**, 33.
j. Land plants.
k. Calyx and corolla turned sharply backward in flower.
Shooting star. **DODECATHEON HENDERSONII**, 102.
k. Calyx and corolla not turned backward.
l. Style bent sharply at a right angle.
m. Leaves absent.....Parasitic Pyrola. **PYROLA APHYLLA**, 97.
m. Leaves present.
n. Leaves conspicuously white-veined.
White-veined shin-leaf. **PYROLA PICTA**, 96.
n. Leaves not conspicuously white-veined.
o. Flowers greenish-white.
Shade-loving Pyrola. **PYROLA CHLORANTHA**, 97.
o. Flowers red or purple.
Leathery shin-leaf. **PYROLA BRACTEATA**, 97.
l. Style not bent.
m. Flower parts mostly in 4's.
Whitlow grass, **DRABA VERNA**, 49.
m. Flower parts mostly in 5's.
Small-leaved Montia. **MONTIA PARVIFOLIA**, 29.
h. Leaves compound.
i. Leaves with 3 palmate divisions, these not further cleft or divided, merely toothed.
j. Plant producing stolons.
k. Leaves thick, leathery.
Sand strawberry. **FRAGARIA CHILENSIS**, 64.

k. Leaves not thick and leathery. *Page*
l. Flowers raised several inches above ground on stems.
Wood strawberry. **FRAGARIA BRACTEATA, 64.**
l. Flowers mostly close to ground.
Wild strawberry. **FRAGARIA CUNEIFOLIA, 64.**
j. Plant not producing stolons.
k. Flower stem 1-flowered..Wood sorrel. **OXALIS OREGANA, 80.**
k. Flower stem several-flowered.
Many-flowered Oxalis. **OXALIS TRILLIIFOLIA, 80.**
i. Leaves with 3 palmate divisions, these further cleft or divided.
j. Petals turned backward in flower.
Inside-out flower. **VANCOUVERIA HEXANDRA, 42.**
j. Petals not turned backward in flower.
k. Petals 4, 2 of these spurred.
Bleeding heart. **DICENTRA FORMOSA, 44.**
k. Petals 5 or 6, thread-like, none spurred.
Gold thread. **COPTIS LACINIATA, 34.**
g. Leaves not all basal.
h. Leaves all alternate or some basal.
i. Petals united, at least at base.
j. Flower cluster coiled scorpion-like.
k. Corolla blue, changing from yellow.
Flower minute.....Small forget-me-not.
MYOSOTIS LUTEA var. **VERSICOLOR, 112.**
k. Corolla yellow or orange.
Fiddle-neck. **AMSINCKI INTERMEDIA, 113.**
k. Corolla white.
l. Calyx clothed with hooked hairs.
White forget-me-not. **MYOSOTIS MACROSPERMA, 112.**
l. Calyx clothed with long slender straight hairs.
m. Flowers ¼ in. or more broad.
Popcorn flower. **PLAGIOBOTHRYS NOTHOFULVUS, 114.**
m. Flowers much smaller.
Small popcorn flower. **PLAGIOBOTHRYS TENELLUS, 114.**
j. Flower cluster not coiled scorpionlike.
k. Corolla irregular.
l. At least upper leaves cleft or divided.
m. Leaves pinnately cut into thread-like divisions.
ORTHOCARPUS PUSILLUS, 125.
m. Upper leaves mostly 3-cleft or divided, but not into thread-like divisions. Lower leaves mostly entire.
n. Lower lip of corolla sac-like.
o. Flowers white.
Slender owl's clover. **ORTHOCARPUS ATTENUATUS, 125.**
o. Flowers purple.
Purple owl's clover. **ORTHOCARPUS BRACTEOSUS, 125.**
n. Lower lip of corolla not sac-like.
Indian paint brush. **CASTILLEIA ANGUSTIFOLIA, 124.**
l. Leaves entire or merely toothed.
Fox glove. **DIGITALIS PURPUREA, 124.**
k. Corolla regular.
l. Fruit a berry.....Nightshade. **SOLANUM NIGRUM, 118.**
l. Fruit not a berry.
m. Leaves palmately 3 or more veined at base.
n. Bractlets 3 on calyx.
o. Plant prostrate.
Cheese plant. **MALVA ROTUNDIFOLIA, 87.**
o. Plant erect.....Musk mallow. **MALVA MOSCHATA, 87.**

n. Bractlets 2. *Page*
o. Bractlets broad, closely enclosing the calyx.....Hedgerow morning-glory. CONVOLVULUS NYCTAGINEUS, 105.
o. Bractlets narrow, distant from calyx.
p. Plants twining or trailing.
Field morning-glory. CONVOLVULUS ARVENSIS, 106.
p. Plants not twining or trailing.
q. Herbage grayish green. Flowers pale pink.
Tall wild hollyhock. SIDALCEA CAMPESTRIS, 88.
q. Herbage bright green. Flowers bright pink or red.
Showy wild hollyhock. SIDALCEA VIRGATA, 88.
m. Leaves not palmately veined.
n. Leaves pinnately cleft or divided.
o. Flowers blue.
p. Stamens and style twice as long as corolla.
Water-leaf. HYDROPHYLLUM TENUIPES, 109.
p. Stamens and style scarcely longer than corolla.
Field gillyflower. GILIA CAPITATA, 108.
o. Flowers pink to magenta.
Vari-leaved Collomia. COLLOMIA HETEROPHLL, 107.
n. Leaves simple.
o. Corolla more or less trumpet-shaped.
p. Corolla small, salmon color.
COLLOMIA GRANDIFLORA, 107.
p. Corolla small, blue changing from pink.
Blue bells. MERTENSIA DENTICULATA, 112.
p. Corolla large, 4 in. or more long, white or pinkish.
Jimson weed. DATURA STRAMONIUM, 117.
o. Corolla wheel-shaped.
p. Leaves mostly clustered at summit of stem.....Star flower.
TRIENTALIS EUROPAEA var. LATIFOLIA, 103.
p. Leaves not clustered.
Hound's tongue. CYNOGLOSSUM GRANDE, 111.
i. Petals not united at base, sometimes lightly attached at tips.
j. Corolla irregular.
k. Flowers shaped like pea blossoms.
l. Leaves palmately divided into mostly 3 leaflets.
m. Flowers mostly in racemes.
n. Leaves appearing pin-pricked when held to light.
California tea. PSORALEA PHYSODES, 78.
n. Leaves not appearing pin-pricked when held to light.
o. Pods straight.
Yellow lupine. THERMOPSIS GRACILIS, 71.
o. Pods coiled or curved.
p. Flowers blue or violet..Alfalfa. MEDICAGO SATIVA, 73.
p. Flowers yellow.
q. Pod coiled, edge armed with more or less surved prickles.
Bur clover. MEDICAGO HISPIDA, 74.
q. Pod curved, not armed with prickles.
Black medick. MEDICAGO LUPULINA, 74.
m. Flowers in heads.
n. Involucre present.
o. Involucre deeply cleft and toothed.
p. Annual. Calyx lobes mostly 3-toothed.
3-toothed clover. TRIFOLIUM TRIDENTATUM, 74.
p. Perennial. Calyx lobes not 3-toothed.
Marsh clover. TRIFOLIUM INVOLUCRATUM, 74.
o. Involucre not deeply cleft.
p. Involucre nearly enclosing head.
Cup clover. TRIFOLIUM MICRODON, 75.

p. Involucre only at base.....Small-headed clover. TRIFOLIUM MICROCEPHALUM, 75. *Page*
n. Involucre absent.
o. Annual.
p. Flowers crimson.
Crimson clover. TRIFOLIUM INCARNATUM, 76.
p. Flowers dark purple. Calyx teeth with long soft hairs.
Rancheria clover. TRIFOLIUM ALBOPURPUREUM, 76.
p. Flowers yellow, Calyx teeth without long soft hairs.
q. Heads less than ⅝ in. long.
Small hop clover. TRIFOLIUM DUBIUM, 75.
q. Heads more than ⅝ in. long.
Hop clover. TRIFOLIUM PROCUMBENS, 75.
o. Perennial.
p. Calyx teeth covered with long soft hairs.
Woolly clover. TRIFOLIUM ERIOCEPHALUM, 76.
p. Calyx teeth not covered with long soft hairs.
q. Plants mostly erect. Flowers red or pink.
Red clover. TRIFOLIUM PRATENSE, 76.
q. Plants procumbent.
r. Stems creeping, rooting at the nodes. Flowers white.
White clover. TRIFOLIUM REPENS, 76.
r. Stems not creeping or rooting at the nodes. Flowers pinkish.....Alsike. TRIFOLIUM HYBRIDUM, 75.
l. Leaves palmately divided into more than 3 leaflets.
m. Annual.
n. Bracts shorter than the calyx.
Small lupine. LUPINUS MICRANTHUS, 72.
n. Bracts equalling or exceeding the calyx.
Showy lupine. LUPINUS NANUS var. CARNOSULUS, 72.
m. Perennial.
n. Flowers purple or dirty white. Stems silky.
o. Leaves short-hairy, not silky.
Silver-stemmed lupine. LUPINUS ALBICAULIS, 73.
o. Leaves, especially when young, very silky.
Silver-leaved lupine. LUPINUS ALBIFRONS, 72.
n. Flowers violet or dirty white. Stems not silky.
Large lupine. LUPINUS POLYPHYLLUS, 72.
l. Leaves pinnately divided.
m. Leaves with tendrils.
n. Style thread-like, hairy only near the tip.
o. Flowers solitary or in pairs.
Common vetch. VICIA SATIVA, 78.
o. Flowers in racemes.
p. Flowers generally yellow.
Giant vetch. VICIA GIGANTEA, 79.
p. Flowers blue or purple.
q. Raceme dense, 1-sided.
Hairy vetch. VICIA VILLOSA, 79.
q. Raceme loose, not 1-sided.
American vetch. VICIA AMERICANA, 79.
n. Style flattened, hairy on inner face.
Yellow pea. Lathyrus sulphureus, 79.
m. Leaves without tendrils.
n. Flowers solitary or in pairs.
o. Flower stems shorter than the leaves.
LOTUS DENTICULATUS, 77.
o. Flower stems mostly longer than the leaves.
Slender trefoil. LOTUS MICRANTHUS, 77.

n. Flowers in umbels. *Page*
o. Flowers yellow and white.
Butter and eggs. **LOTUS PINNATUS**, 77.
o. Flowers yellow and purple or rose-colored.
Small trefoil. **LOTUS GRACILIS**, 77.
o. Flowers purplish with dark veins.
Pink trefoil. **LOTUS CRASSIFOLIUS**, 78.
k. Flowers not shaped like pea blossoms.
l. Sepals not spurred. At least 1 petal spurred.
m. Petals 4.
Large-leaved Corydalis. **CORYDALIS SCOULERI**, 44.
m. Petals 5.
n. Petals all purple or blue, rarely white.
Blue violet. **VIOLA ADUNCA**, 91.
n. Upper petals dark violet, 3 lower yellow.
Wild pansy. **VIOLA HALLII**, 90.
n. Petals all yellow.
o. Stem prostrate, creeping.
Evergreen violet. **VIOLA SARMENTOSA**, 90.
o. Stem erect.
p. Leaves broadly heart-shaped, without hairs.
Wood violet. **VIOLA GLABELLA**, 91.
p. Leaves not heart-shaped, covered with stiff hairs.
Hairy violet. **VIOLA NUTTALLII**, 90.
l. Upper sepal spurred, also the 2 upper petals.
m. Sepals cream-colored.....White larkspur.
DELPHINIUM MENZIESII var. **OCHROLEUCUM**, 36.
m. Sepals blue or purple.
n. Roots forming tubers. Habitat mostly open fields.
Field larkspur. **DELPHINIUM MENZIESII**, 36.
n. Roots not tuber-like. Habitat mostly moist woods.
Wood larkspur. **DELPHINIUM TROLLIIFOLIUM**, 36.
j. Corolla regular.
k. Water plants.
l. Leaves centrally peltate.
Water shield. **BRASENIA SCHREBERI**, 33.
l. Leaves not centrally peltate.
m. Pistil 1. Fruit a silique.
Water cress. **RADICULA NASTURTIUM-AQUATICUM**, 46.
m. Pistils many, becoming akenes.
n. Submersed leaves present. Floating leaves when present broadly round-lobed.
Water buttercup. **RANUNCULUS AQUATILIS**, 40.
n. Floating leaves present, triangular in outline, with 3 widely-spreading lobes. Narrow-lobed submersed leaves often present.....Leafy water buttercup. **RANUNCULUS LOBBII**, 40.
k. Land plants, sometimes growing in very wet places.
l. Leaves mostly divided into 3 leaflets.
m. Flower parts in 5's.
n. Stems trailing, rooting at lower nodes.
Creeping buttercup. **RANUNCULUS REPENS**, 38.
n. Stems not trailing, not rooting at lower nodes.
Yellow oxalis. **OXALIS SUKSDORFII**, 81.
m. Flower parts in 4's.
Wood bitter cress. **CARDAMINE ANGULATA**, 47.
l. Leaves not divided into 3 leaflets, but sometimes 3-lobed or cleft, or leaflets more than 3.
m. At least lower leaves palmately veined or lobed.
n. Flower parts in 4's.

o. Basal leaves with simple rounded teeth. *Page*
Spring beauty. DENTARIA TENELLA, 47.
o. Basal leaves lobed or cleft.
Large toothwort. DENTARIA MACROCARPA, 48.
n. Flower parts not in 4's.
o. Flowers yellow.
p. Leaves palmately divided into 5 to 7 leaflets.
Five-finger. POTENTILLA GRACILIS, 65.
p. Leaves palmately lobed, not divided.
q. Petals very small, pale yellow, often several missing.
Wood buttercup. RANUNCULUS BONGARDII, 39.
q. Petals showy, deep yellow.
Field buttercup. RANUNCULUS OCCIDENTALIS, 39.
o. Flowers magenta or purple.
Youth-on-age. TOLMIEA MENZIESII, 57.
m. Leaves pinnately veined, entire.
n. Leaves very fleshy. Flowers in branching cymes.
SEDUM SPATHULIFOLIUM, 51.
n. Leaves not fleshy, or if so, flowers not in branching cymes.
o. Flowers yellow.
p. Plant erect.
Marsh buttercup. RANUNCULUS ALISMAEFOLIUS, 38.
p. Plant decumbent at base, rooting at lower nodes.
Creeping spearwort. RANUNCULUS FLAMMULA var. REPTANS, 38.
o. Flowers not yellow.
p. Flowers purple.
Red maids. CALANDRINIA CAULESCENS, 28.
p. Flowers not purple.
q. Flower parts in 4's.
Hairy rock cress. ARABIS HIRSUTA, 45.
q. Flower parts not in 4's.
r. Plants producing stolons.
Small-leaved Montia. MONTIA PARVIFOLIA, 29.
r. Plants not producing stolons.
Narrow-leaved Montia. MONTIA LINEARIS, 28.
m. At least lower leaves pinnately lobed, cleft, or divided.
n. Petals 4.
o. Stamens many.
California poppy. ESCHSCHOLTZIA CALIFORNICA, 43.
o. Stamens 6, 4 long and 2 short.
p. Flowers yellow.
q. Flowers showy, purple-veined.
Jointed charlock. RAPHANUS RAPHANISTRUM, 50.
q. Flowers showy or inconspicuous, not purple-veined.
r. Upper leaves clasping.
s. Upper leaves entire.
Wild turnip. BRASSICA CAMPESTRIS, 48.
s. Upper leaves pinnately cleft.
Winter cress. BARBAREA ORTHOCERAS var. DOLICHOCARPA, 45.
r. Upper leaves not clasping.
s. Seeds globose....Black mustard. BRASSICA NIGRA, 48.
s. Seeds not globose.
t. Pods somewhat curved, plants growing in wet places.
Yellow cress. RADICULA CURVISILIQUA, 46.
t. Pods straight. Plants not growing in wet places.
Hedge mustard. SISYMBRIUM OFFICINALE, 45.
p. Flowers not yellow.

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q. Flowers ⅛ in. long, white.
r. Pods heart-shaped.
Shepherd's purse. CAPSELLA BURSA-PASTORIS, 49.
r. Pods cylindrical.
s. Leaflets rounded, distinctly stalked.
Bitter cress. CARDAMINE OLIGOSPERMA, 46.
s. Leaflets oblong, narrowed at base, not distinctly stalked.
Bitter cress. CARDAMINE PENNSYLVANICA, 47.
q. Flowers ½ to 1 in. long, magenta or white.
Wild radish. RAPHANUS SATIVUS, 50.
n. Petals none or 1 or 2.
Baneberry. ACTAEA SPICATA var. ARGUTA, 35.
n. Petals 5.
o. Petals spurred.....Columbine. AQUILEGIA FORMOSA, 35.
o. Petals not spurred.
p. Sepals united at base, generally with 5 alternate bractlets.
q. Plant with stolons, creeping.
Silver weed. POTENTILLA ANSERINA, 64.
q. Plant without stolons, not creeping.
Large avens. GEUM MACROPHYLLUM, 65.
p. Sepals not united. Bractlets absent.
Bird-foot buttercup. RANUNCULUS ORTHORHYNCHUS, 40.
h. Upper leaves perfoliate.
i. Plant erect, somewhat fleshy.
Miner's lettuce. MONTIA PERFOLIATA, 29.
i. Plant depressed, very fleshy.....Small miner's lettuce.
MONTIA PERFOLIATA var. DEPRESSA, 29.
h. At least some of the leaves opposite or whorled.
i. Flowers slightly to conspicuously irregular.
j. Corolla slightly irregular. Stamens 2.
k. Corolla white.....Neck weed. VERONICA PEREGRINA, 123.
k. Corolla blue.
l. Flowers in a terminal raceme.
m. Plant annual...Small speedwell. VERONICA ARVENSIS, 123.
m. Plant perennial with rootstock....Thyme-leaved speedwell.
VERONICA SERPYLLIFOLIA, 123.
l. Flowers in axillary racemes.
m. Leaves all without petioles. Capsule deeply notched.
Narrow-leaved speedwell. VERONICA SCUTELLATA, 123.
m. Leaves mostly with petioles. Capsule shallowly notched.
Common speedwell. VERONICA AMERICANA, 122.
j. Corolla very irregular.
k. Stamens 2.....GRATIOLA EBRACTEATA, 122.
k. Stamens 5, 4 anther-bearing, the 5th represented by a gland or scale.
l. Flowers green or purplish.
Oregon figwort. SCROPHULARIA OREGANA, 120.
l. Flowers blue or violet.
m. Some or all of the leaves compound.
Baby innocence. TONELLA COLLINSIOIDES, 119.
m. Leaves all simple.
n. Flowers showy, deeply colored. Calyx lobes awl-shaped.
Large innocence. COLLINSIA GRANDIFLORA, 119.
n. Flowers small, delicately colored. Calyx lobes lance-shaped.
Small innocence. COLLINSIA PARVIFLORA, 118.
k. Stamens 4.
l. Flowers yellow.
m. Annual. Flowers small with single purple spot in middle of lower lip.....MIMULUS ALSINOIDES, 120.

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m. Perennial. Flowers large with several purple dots in throat.
n. Leaves palmately veined.
Common monkey-flower. MIMULUS GUTTATUS, 120.
n. Leaves pinnately veined.
o. Corolla pale yellow. Leaves and stems sticky, musk-scented.
Musk. MIMULUS MOSCHATUS, 120.
o. Corolla deep yellow. Leaves and stems not sticky or musk-scented.
Woods monkey-flower. MIMULUS DENTATUS, 121.
l. Flowers not yellow.
m. Plant creeping, at least at base.
n. Plant long trailing. Flowers white, borne singly in the leaf-axils.....**Oregon tea. MICROMERIA DOUGLASII, 115.**
n. Plant not trailing. Flowers in clusters in the leaf axils, purplish.
o. Upper leaves clasping.
Dead-nettle. LAMIUM AMPLEXICAULE, 116.
o. Upper leaves not clasping.
Perennial dead-nettle. LAMIUM MACULATUM, 117.
m. Plant not creeping.
n. Plant 2½ in. or less tall.
Purple monkey-flower. MIMULUS DOUGLASII, 121.
n. Plant taller.
o. Upper leaves not stalked.
Hedge nettle. STACHYS PALUSTRIS, 115.
o. Upper leaves stalked.
p. Corolla tube about the length of the calyx or slightly longer.....**STACHYS BULLATA, 116.**
p. Corolla tube twice the length of the calyx.
q. Corolla tube ½ in. or less long. Calyx covered with long soft hairs.....**STACHYS PUBENS, 116.**
q. Corolla tube ¾ in. or more long. Calyx usually without hairs.....**Giant hedge-nettle. STACHYS CILIATA, 116.**
i. Flowers not at all irregular.
j. Petals not united, or only slightly so at base.
k. Plant growing in running water.
Water Montia. MONTIA FONTANA, 28.
k. Not growing in running water.
l. Divisions of ovary 5.
m. Sections of ovary separating at maturity. Flowers purplish.
n. Flowers large (1½ to 2 in. broad).
Large geranium. GERANIUM INCISUM, 82.
n. Flowers small (¼ in. broad).
o. Leaves pinnately compound.
Filaree. ERODIUM CICUTARIUM, 83.
o. Leaves palmately lobed.
p. Ovary wrinkled, hairs none.
Dove's foot geranium. GERANIUM MOLLE, 82.
p. Ovary wrinkled or smooth, with hairs.
q. Ovary not wrinkled. Seeds smooth.
Small-flowered geranium. GERANIUM PUSILLUM, 82.
q. Seeds not smooth.
r. Ovary hairy, not wrinkled.
Carolina geranium. GERANIUM CAROLINIANUM, 82.
r. Ovary hairy, transversely wrinkled.
Cut-leaved geranium. GERANIUM DISSECTUM, 82.
m. Sections of ovary not separating at maturity.
n. Flowers white.

o. Plant 1-flowered. *Page*
Single beauty. MONESES UNIFLORA, 96.
o. Plant with more than 1 flower.
p. Petals much longer than the sepals.
Field mouse-eared chickweed. CERASTIUM ARVENSE, 30.
p. Petals not longer than the sepals.
q. Perennial or biennial. Petals as long as the sepals.
Mouse-eared chickweed. CERASTIUM VULGATUM, 31.
q. Annual. Petals shorter than the sepals.....Annual mouse-eared chickweed. CERASTIUM VISCOSUM, 30.
n. Flowers commonly crimson or purplish.
Corn cockle. AGROSTEMMA GITHAGO, 32.
l. Divisions of ovary not 5.
m. Flowers yellow.
n. Plant erect. Flowers black-dotted.
o. Plant with stolons.
St. John's Wort. HYPERICUM PERFORATUM, 89.
o. Plant without stolons.....Slender St. John's Wort.
HYPERICUM FORMOSUM var. SCOULERI, 90.
n. Plant forming low mat. Flowers not black-dotted.
Water St. John's Wort. HYPERICUM ANAGALLOIDES, 89.
m. Flowers not yellow.
n. Sepals 2.....Candy flower. MONTIA SIBIRICA, 29.
n. Sepals more than 2.
o. Petals 2-cleft.....Chickweed. STELLARIA MEDIA, 31.
o. Petals 4-cleft.....Indian pink. SILENE HOOKERI, 32.
o. Petals entire.....ARENARIA MACROPHYLLA, 31.
j. Petals partly united.
k. Flowers white or pale blue.
l. Flower stems 1-flowered, not coiled.
m. Flowers $\frac{3}{4}$ in. broad.....Pale baby blue-eyes.
NEMOPHILA MENZIESII var. ATOMARIA, 109.
m. Flowers $\frac{1}{4}$ in. or less broad.
n. Corolla tubular. Calyx appendages much shorter than the sepals.....Woods Nemophila.
NEMOPHILA PARVIFLORA, 110.
n. Corolla bell-shaped. Calyx appendages equalling the sepals.
Small Nemophila. NEMOPHILA SEPULTA, 110.
l. Flower stems many-flowered and coiled scorpion-like.
m. Flowers $\frac{1}{4}$ in. broad, more or less.
n. Corolla wheel-shaped with 5 conspicuous swellings at throat. Fruits consisting of 4 nutlets.
o. Nutlets short-stalked.....ALLOCARYA STIPITATA, 113.
o. Nutlets without stalks.
Scorpion grass. ALLOCARYA SCOULERI, 113.
n. Corolla bell-shaped without conspicuous swellings at throat.
PHACELIA HETEROPHYLLA, 110.
m. Flowers $\frac{1}{8}$ in. broad, more or less.
Small scorpion grass. ALLOCARYA HISPIDULA, 114.
k. Flowers not white or pale blue.
l. Flowers salmon with blue center.
Pimpernel. ANAGALLIS ARVENSIS, 103.
l. Flowers clear pink or greenish.
m. Plants with milky juice. Perennial.
n. Corolla pink, longer than calyx.
Dog-bane. APOCYNUM ANDROSAEMIFOLIUM, 104.
n. Corolla greenish, not longer than calyx.
Indian hemp. APOCYNUM CANNABINUM, 105.
m. Plant without milky juice. Annual.

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n. Leaves entire.....PHLOX GRACILIS, 107.
n. Leaves palmately parted, apparently whorled.
Baby stars. LINANTHUS BICOLOR, 108.
b. Ovary united with calyx, at least at base.
c. Flowers in umbels.
d. Flowers purple.....Purple parsley. LEPTOTAENIA DISSECTA, 93.
d. Flowers yellow.
e. Leaves all basal.
Naked-stemmed hog fennel. LOMATIUM NUDICAULE, 93.
e. Leaves not all basal.
f. Petioles conspicuously dilated at base.
Spring gold. LOMATIUM UTRICULATUM, 94.
f. Petioles not dilated at base.
Hog fennel. LOMATIUM TRITERNATUM, 94.
d. Flowers white.....Cow parsnip. HERACLEUM LANATUM, 94.
c. Flowers not in umbels.
d. Flowers small, in compact heads surrounded by an involucre.
e. Fruits fleshy, scarlet.....Bunchberry. CORNUS CANADENSIS, 95.
e. Fruits not fleshy.
f. Ray flowers present.
g. Heads consisting of ray flowers only.
h. Heads yellow.
i. Flower stem bearing a single head. Pappus not plumose.
Dandelion. TARAXACUM VULGARE, 135.
i. Flower stem bearing several heads. Pappus plumose.
False dandelion. HYPOCHOERIS RADICATA, 134.
h. Heads purple.....Salsify. TRAGOPOGON PORRIIFOLIUS, 134.
g. Heads consisting of both ray and disk flowers.
h. Ray flowers yellow.
i. Leaves large, mostly basal.
j. Basal leaves heart-shaped or somewhat so at base. Pappus none.
Balsam root. BALSAMORHIZA DELTOIDEA, 136.
j. Basal leaves long lance-shaped, not heart-shaped at base. Pappus present.....Wild sunflower. WYETHIA ANGUSTIFOLIA, 136.
i. Leaves not large, not mostly basal.
j. Rays 3-lobed. Leaves entire or merely toothed.
Showy tar-weed. MADIA ELEGANS, 136.
j. Rays entire. Leaves mostly 3- to 7-lobed or parted.
Woolly sun-flower. ERIOPHYLLUM LANATUM, 137.
h. Ray flowers pink.....Fringed daisy. ERIGERON LINEARIS, 135.
h. Ray flowers white.....Marguerite. CHRYSANTHEMUM LEUCANTHEMUM var. PINNATIFIDUM, 137.
f. Ray flowers absent.
g. Heads yellow.
h. Leaves simple.....Groundsel. SENECIO VULGARIS, 139.
h. Leaves compound.
Seaside tansy. TANACETUM HURONENSE, 138.
g. Heads not yellow.
h. Outer disk flowers enlarged, showy.
French pink. CENTAUREA CYANUS, 139.
h. Outer disk flowers not enlarged.
Colt's foot. PETASITES PALMATA, 138.
d. Flowers not in compact heads and not surrounded by an involucre.
e. Leaves all, or mostly, appearing basal.
f. Calyx 3-lobed. Petals absent.
Ginger root. ASARUM CAUDATUM, 24.
f. Calyx 5-lobed. Petals when present, 5.
g. Leaves peltate.....Peltiphyllum peltatum, 53.

g. Leaves not peltate. *Page*
h. Petals minute or absent.
i. Whole plant densely glandular-hairy.
Glandular alum-root. HEUCHERA OVALIFOLIA, 56.
i. At least leaves not glandular-hairy.
Tall alum-root. HEUCHERA CHLORANTHA, 56.
h. Petals present.
i. Petals pinnately cleft.—Small bishop's cap. MITELLA OVALIS, 55.
i. Petals entire.
j. Flowers in dense panicles.
k. Flower stem 1 to 3 ft. tall. Leaves without petioles.
SAXIFRAGA OREGANA, 52.
k. Flower stem 1¼ ft. or less tall. Petioles present.
SAXIFRAGA INTEGRIFOLIA, 53.
j. Flowers in loose panicles.
k. Leaves palmately lobed.
Small-flowered alum root. HEUCHERA MICRANTHA, 55.
k. Leaves coarsely toothed but not palmately lobed.
SAXIFRAGA ODONTOLOMA, 53.
e. Leaves not all appearing basal.
f. Leaves opposite, at least below.
g. Trailing vines. Flowers in pairs.
Twin flower. LINNAEA BOREALIS var. AMERICANA, 129.
g. Not trailing vines.
h. Corolla absent.....Golden saxifrage.
CHRYSOSPLENIUM GLECHOMAEFOLIUM, 57.
h. Corolla present, irregular.
i. Fruit not winged. Flowers blue.
Blue-flowered corn-salad. VALERIANELLA SAMOLIFOLIA, 132.
i. Fruit broadly winged. Flowers pink.
Pink-flowered corn-salad. VALERIANELLA CONGESTA, 132.
f. Leaves whorled.
g. Calyx teeth present....Field madder. SHERARDIA ARVENSIS, 127.
g. Calyx teeth absent.
h. Flower stem generally 3-flowered.
Fragrant bedstraw. GALIUM TRIFLORUM, 127.
h. Flower stem 1-flowered.
i. Stems erect. Upper leaves mostly in 2's.
Twin-leaved bedstraw. GALIUM BIFOLIUM, 127.
i. Stems weak, reclining. Upper leaves not in pairs.
Goose-grass. GALIUM APARINE, 127.
f. Leaves alternate.
g. Stamens and pistils in separate flowers.
Wild cucumber. ECHINOCYSTIS OREGANUS, 92.
g. Stamens and pistils in same flower.
h. Petals absent....Bastard toad flax. COMANDRA UMBELLATA, 23.
h. Petals present.
i. Petals not united.
j. Petals not cleft or divided.
k. Petals thread-like.
l. Basal leaves palmately lobed.
Cool-wort. TIARELLA UNIFOLIATA, 53.
l. Basal leaves palmately divided into 3 leaflets.
Three-leaved cool-wort. TIARELLA TRIFOLIATA, 54.
k. Petals 5, white, not thread-like.
l. Stamens 5.....Smooth alum-root. HEUCHERA GLABRA, 56.
l. Stamens 10.
m. Slender annual.....Nuttall's saxifrage.
SAXIFRAGA NUTTALLII, 52.

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m. Perennial with tufted branches.
Tufted saxifrage. SAXIFRAGA CAESPITOSA, 52.
j. Petals cleft or divided.
k. Petals palmately 3-cleft.
Ragged star-flower. LITHOPHRAGMA PARVIFLORA, 54.
k. Petals pinnately cleft or divided.
l. Calyx inflated. Petals white or pink.
Fringe-cups. TELLIMA GRANDIFLORA, 55.
l. Calyx not inflated. Petals greenish.
Leafy-stemmed bishop's cap. MITELLA CAULESCENS, 55.
i. Petals united at base.
j. Style much prolonged beyond corolla.
k. Flowers deep blue. Corolla lobes narrow.
Slender blue-bell. CAMPANULA PRENANTHOIDES, 133.
k. Flowers pale blue. Corolla lobes ovate.
Pale blue-bell. CAMPANULA SCOULERI, 133.
j. Style scarcely or not at all prolonged beyond corolla.
GITHOPSIS SPECULARIOIDES, 133.

Descriptions of Families, Genera and Species

Class **ANGIOSPERMAE**. Flowering plants. Ovules enclosed in an ovary. Plants bearing true flowers consisting of stamens and pistils generally surrounded by sepals and petals or other protecting parts.

MONOCOTYLEDONS

Leaves commonly parallel veined. Flower parts generally in threes. Vascular bundles scattered irregularly through the stem. Embryo with 1 seed leaf.

ARACEAE. Arum family

Perennial herbs with large leaves. Flowers small, generally of one sex, many, on a fleshy spadix surrounded by a showy, generally colored spathe. Fruit a berry (in ours).

Lysichiton Schott.

Rootstock stout with conspicuous leaf scars. Leaves basal, very large and thin, with thick spongy midribs. Flowers with both stamens and pistils. Calyx lobes 4. Stamens 4, opposite the calyx lobes. Ovary 2-celled. Berry 2-seeded, embedded in the spadix.

Lysichiton kamtschatcense (L.) Schott. **Skunk cabbage.** Leaves 1 to 2 feet long, oblong-elliptic; peduncle shorter than the leaves; spadix thick, becoming 4 or 5 inches long at maturity; spathe somewhat hoodshaped, golden yellow, at first enclosing the spadix which later extends beyond it. Blossoms somewhat pleasantly fragrant, but stems and leaves producing a skunk-like odor.

Swamps.

Lysichiton kamtschatcense. Skunk cabbage.

LILIACEAE. Lily family

Ours, herbs with perennial bulbs, corms, or rhizomes, the peduncles and leaves dying and withering after blossoms and seeds are produced. Flower parts generally in threes, rarely twos. Sepals and petals often similar in appearance. Stamens six or fewer. Ovary superior, generally with 3 compartments. Fruit a capsule or berry.

Xerophyllum Michx.

Stem unbranched, stout, apparently arising from dense tuft of narrow leaves which continue on up the stem, decreasing in length upward to the flowers. Leaves needle-like with somewhat enlarged bases and rough edges. Flowers cream colored, borne in dense raceme. Sepals and petals similar, remaining on pedicel after withering. Ovary 3-lobed.

Xerophyllum tenax. Bear-grass.

Xerophyllum tenax (Pursh) Nutt. **Bear-grass. Squaw-grass. Pine Lily.** Stem 1½ to 6 ft. tall; basal leaves 1 to 3 ft. long, ⅛ to ⅜ in. wide; raceme ½ to 1½ ft. long densely covered with minute flowers on long pedicels, forming pyramid of blossom until all buds are opened; each flower subtended by narrow bract longer than bud and nearly equalling pedicel of flower; stamens slightly longer than sepals and petals.

Cleared hillsides in the Coast Range and Cascades.

Zygadenus Michx.

Leaves slender, mostly basal, arising with the peduncle from a bulb. Outer scales of the bulb generally dark. Flowers small, yellowish white, in a raceme or panicle, each flower subtended by a cream-colored tissue-like bract, and the peduncle generally bearing two or more larger bracts below the blossom cluster. Sepals and petals not at all united, each bearing a greenish gland at base. Styles 3. Capsule 3-lobed.

Zygadenus venenosus Wats. **Death camass.** Peduncle 1 to 2 ft. tall, bearing a raceme of small cream-colored flowers; leaves

slender, several, often folded, shorter than the peduncle; bracts at base of flowers slender and nearly as long as pedicels; sepals and petals nearly alike, each with conspicuous gland in depression at base; stamens about equalling sepals and petals in length.

Moist and often shady places in fields and on hillsides.

Zygadenus venenosus.
Death camass.

Veratrum L.

Rootstock stout. Stem tall with large coarse parallel-veined leaves which are more or less folded. Stem and leaves covered with fine hairs. Flowers many, greenish or cream-colored in large terminal panicle. Perianth segments 6, attached to the base of the ovary. Stamens 6, free from the perianth. Styles 3. Fruit a capsule, 3-celled.

Veratrum californicum Durand. **False white hellebore.** Stem 3 to 6 feet tall, stout, very leafy; leaves ovate or elliptic, acute at apex, sheathing the stem at the base, ½ to 1 foot long; panicle 1 foot or more long with membranous bracts or the lower leaf-like; flowers whitish, ¾ of an inch in diameter; perianth segments greenish at base, each bearing 1 or 2 glands; capsule leathery.

Veratrum californicum.
False white hellebore.

Rather common in marshy, open places, also in moist, shady woods.

Veratrum viride Ait. **American white hellebore.** Similar to *V. californicum* but with mostly leaf-like bracts, green flowers, and panicle branches more open and drooping.

Generally found at higher altitudes than *V. californicum.*

Camassia Lindl. **Camass**

Leaves slender, basal, several, arising with peduncle from bulb. Flowers 1¼ to 2 in. in diameter, blue or white, in a simple raceme, each flower subtended by a slender bract. Sepals and petals (collectively) 6,

not at all united. Stamens 6, shorter than the sepals and petals. Style 3-cleft at apex. Capsule 3-lobed.

Cassamassia leichtlinii.
Large camass.

Quamash or camass is the name given to these plants by the Indians who used the bulbs for food.

Camassia leichtlinii (Baker) Wats. **Large camass.** Peduncle 1 to 2 ft. tall, somewhat stout; flowers dark purplish blue or sometimes cream-colored; sepals and petals spreading equally from center like spokes of a wheel, twisting together above capsule after blossoming, later falling together.

Common in wet meadows.

Camassia quamash (Pursh) Greene. **Small camass.** Peduncle ½ to 2 ft. tall, generally slender; flowers dark blue or often lighter, sometimes white, generally more delicate than those of *C. leichtlinii:* sepals and petals not spreading equally from center, but generally one segment erect and the other five turned downward, each withering separately after blossoming, and falling separately.

Common in wet meadows.

Camassia quamash.
Small camass.

Allium L. Wild Onion

Leaves basal, sheathing the base of the peduncle, generally few and slender, sometimes broad, arising with the peduncle from a bulb or corm. Flowers borne in an umbel or head subtended by several tissue-like bracts. Sepals and petals (collectively) 6, not at all or only very slightly united. Leaves and peduncle with characteristic onion taste and odor. Fruit a capsule, often crested at summit.

Allium crenulatum Weig. **Alpine onion.** Peduncle 1 to 3 in. tall, stout, exceeded by the leaves; leaves 2, broad, curved, 4 to 6

in. long; umbel compact, subtended by 2 or 3 broad bracts narrowing to acute tip; flowers 6 to 12, deep red, ¼ to ⅜ in. long, pedicels ¼ to ½ in. long; capsule 6-crested at summit. Found at altitude of 3,000 ft. and above.

Common on Mary's Peak.

Allium crenulatum. Alpine onion.

Allium cernuum Roth. **Common wild onion.** Peduncle 1 to 1½ ft. tall, longer than the leaves; leaves several, slender, grass-like; umbel head-like, subtended by 4 or 5 tissue-like bracts; flowers pale pink, nodding, pedicels ½ in. long; stamens extending beyond sepals and petals.

Common in fields.

Brodiaea Sm.

Leaves all basal, mostly few and slender, arising with the peduncle from a corm. Flowers borne in a compact or loose umbel or umbel-like cluster. Perianth segments similar, partly united. Fertile stamens 6; or 3 and alternating with 3 sterile stamens. Filaments slender or winged. Capsule splitting to allow escape of seeds.

Allium cernuum. Common wild onion.

Brodiaea pulchella (Salisb.) Greene. **Ookow. Field cluster lily.** Peduncle 2 ft. or more tall, sometimes bent or twisted; flowers in compact head-like cluster, few- to 20-flowered, subtended by several ovate bracts; flowers light to dark purple, ½ - ¾ in. long; stamens with anthers 3, the short filaments united to the perianth; stamens without anthers 3, deeply cleft.

Fields and hillsides.

Brodiaea pulchella. Field cluster lily. Longitudinal view of flower.

Brodiaea capitata Benth. **Blue Dicks. Common cluster lily.** Peduncle ½ to 2 ft. tall; flowers blue, 4 to 12 in compact head-like umbel subtended by 3 or 4 purplish bracts; stamens with anthers 6, 3 with winged filament extending beyond the anther like a cleft appendage, 3 with

filaments not winged but slightly dilated at base, and with small anthers.

Rather common in fields.

(*a*) (*b*)
Brodiaea capitata.
Common cluster lily.

Brodiaea hyacinthina (Lindl.) Baker. **White cluster lily.** Peduncle 1 to 2 ft. tall; umbel somewhat loose, 8- to 40-flowered, subtended by several slender bracts; pedicels ½ to 1½ in. long; perianth white or whitish with green mid-veins, ¼ to ½ in. long; fertile stamens 6; filaments dilated at base, narrowed above; ovary short-stalked, with gland on each flat face near base of style.

Fields.

Brodiaea hyacinthina.
White cluster lily.

Calochortus Pursh. **Mariposa Lily**

Stem arising from corm with 1 narrow basal leaf (or rarely 2). Stem leaves shorter and narrower than basal leaf. Flowers generally showy, few. Sepals and petals unlike, sepals generally more slender, colored like the petals or greenish. Petals generally broad, with gland on surface or in pocket at base. Gland sometimes present at base of sepal also. Stamens 6. Capsule 3-angled or 3-winged.

Calochortus tolmiei.
Cat's ear.

Calochortus tolmiei Hook. and Arn. **Cat's ear. Pussy's ear.** Plant ½ to ¾ ft. tall, flower generally exceeded in height by basal leaf; basal leaf ¼ to ½ in. wide, conspicuously parallel-veined, bluish green, somewhat curved; leaves on stem much shorter and narrower, few, alternate except upper pair; flowers 1 - 1½ in. in diameter, 1 or several borne in angle between upper pair of leaves; sepals slender, pointed, greenish, or often dark purplish on back, without

glands; petals broadly obovate, mucronate, deep lavender to nearly white, hairy on inner surface to gland at base which is smooth; ragged fringe generally present above gland. Capsule broadly winged.

Common in somewhat moist fields and roadsides, shaded by grasses and shrubs.

Erythronium L.

Stem short, from a corm. Leaves 2, appearing basal, the peduncle arising between them. Flower large, solitary or several in a raceme. Perianth segments 6, nearly alike, all or only the 3 inner segments provided with nectar glands and crests. Stamens 6, shorter than the perianth segments and free from them. Style 3-cleft or entire. Capsule 3-celled, somewhat 3-angled, splitting to allow escape of seeds.

Erythronium giganteum Lindl. **Fawn lily. Cream-colored adder's tongue.** 6 to 15 inches tall; leaves "water-marked" or brown mottled or clear green, lanceolate, 3 to 10 inches long, generally obtuse and mucronate at apex; peduncle 1- to several-flowered; flowers pale cream colored with orange center, 2 to 3 inches in diameter, both buds and blossoms nodding; perianth segments reflexed in mature flower; capsule erect, long, narrow at base, gradually widening toward apex.

Erythronium giganteum. Fawn lily.

Shady moist woods.

Erythronium parviflorum (Wats.) Goodding. **Yellow adder's tongue.** Leaves not mottled; flowers deep golden yellow, paler at center, the perianth segments finally becoming reflexed.

At high altitudes, the plants closely hugging the ground in exposed places.

Erythronium revolutum Sm. **Pink coast adder's tongue.** Three to 12 inches tall; leaves conspicuously mottled with dark brown, lanceolate to elliptic, 4½ or more inches long, generally obtuse and mucronate at apex; peduncle 1-flowered; flowers deep orchid or rose pink with golden or nearly orange base; buds generally erect but blossoms nodding; perianth segments turned backward in mature flowers.

Scales of corms 3 or more inches long in larger plants; corms producing offshoots, sometimes 5 or 6 found at different stages on 1 plant, all with roots.

Found in open places near the coast.

Fritillaria L.

Stem unbranched, leafy, arising from a bulb or corm. Leaves alternate or whorled. Flowers generally showy, solitary or in racemes. Sepals and petals similar, each with nectar gland near base. Stamens 6, anthers usually attached near center to filament. Capsule 6-angled or winged.

Fritillaria lanceolata Pursh. **Rice-root lily. Spider lily.** Stem 1 to 2½ ft. tall; corm covered with minute corms like grains of rice, hence common name of plant; leaves ovate-lanceolate, in several whorls, the rest alternate; flowers 1 to 1½ in. in diameter, broadly bell-shaped, greenish mottled with purple in checkerboard effect, each petal and sepal with deep pocket containing gland; style 3-cleft; capsule broadly winged.

Fritillaria lanceolata. Rice-root lily.

Shaded spots in clearings and shady moist roadsides.

Lilium L.

Stem unbranched, leafy, arising from scaly bulb or rootstock. Flowers showy, erect or nodding, solitary or several in a raceme. Sepals and petals similar, 6, each with nectar-gland at base. Stamens 6, anthers attached at center to filament. Style 1, stigmas 3.

Lilium columbianum Hanson. **Tiger lily. Oregon lily.** Stems 1½ to 4 ft tall, leafy; leaves mostly in whorls, sometimes lowermost and uppermost alternate; leaves lanceolate or oblanceolate, generally acute at apex, 1 to 4 in. long; flowers solitary or several, deep orange-red with dark purple spots, the sepals and petals strongly turned backward.

Lilium washingtonianum Kell. **Cascade lily.** Stem 3 to 6 ft. tall; leaves mostly in whorls, some alternate, long-elliptic or oblanceolate, acute at apex; flowers solitary or more often several in a raceme, 2½ to 4 in. long, tubular spreading to bell-shape, white

at first with sometimes minute dots, becoming pinkish to purplish with age; capsule angled, sometimes narrowly winged.

Common in the Cascades, but also found in fields of the Willamette Valley.

Lilium columbianum. Tiger lily.

This fragrant lily is one of the most beautiful of those native to the Pacific Coast, and is in need of protection. It is rapidly disappearing before the too ardent flower-lover and the commercial materialist who digs and sells the bulbs in enormous numbers.

Streptopus Michx.

Branched stems from creeping rootstocks. Leaves alternate, ovate, pointed at apex, sessile or clasping. Flowers white or greenish, borne singly or in pairs in the leaf axils. Peduncles slender, bent or twisted at the middle. Stamens 6. Fruit a red berry.

Lilium washingtonianum. Cascade lily.

Streptopus amplexifolius (L.) D. C. **Twisted stalk.** Stems 1 to 3 feet tall; leaves broad to long-ovate, acuminate, clasping at base, green above, glaucous beneath, 2 to 4 inches long; flowers ½ in. or less long, whitish, hidden by the leaves; peduncle bearing small gland at bend.

Shady woods and stream borders.

Disporum Salisb.

Stem branched, erect, from a short horizontal rootstalk. Lowermost leaves mostly below ground, scale-like, sheathing. Foliage leaves ovate to oblong-elliptic, thin. Flowers bell-shaped, drooping, cream-colored or greenish, few or solitary, borne terminally. Fruit a berry.

Disporum smithii (Hook) Piper. **Fairy lanterns.** One to 3 feet tall, leaves and stems minutely downy or glabrous; foliage leaves broadly ovate or long ovate, acute or tapering to a slender

point, obtuse or somewhat heart-shaped at base (sometimes one side of base cut off obliquely); flowers cream-colored or white, broad at base, $\frac{3}{4}$ to 1 in. long, perianth segments not spreading; stamens shorter than perianth; style 3-cleft at apex; berry yellow to orange, short-beaked, beak somewhat wrinkled.

Disporum smithii.
Fairy lanterns.

Common in moist shady woods.

Disporum oreganum (Wats.) B. and H. **Fairy bells.** One to 2 feet tall; leaves and stems minutely downy or smooth; foliage leaves ovate, tapering to a long point at apex, cordate at base, upper leaves sometimes oblique; flowers greenish, narrow at base, $\frac{3}{4}$ in. long, borne on hairy pedicels, perianth segments spreading; stamens longer than perianth; style entire.

Found with *D. smithii* in moist shady woods.

Disporum oreganum.
Fairy bells.

Similacina Desf.

Stems simple from a horizontal rootstock, bearing small white flowers in a terminal raceme or panicle. Leaves 8 to 12, sessile, many-veined. Perianth segments 6, similar, persistent. Stamens 6, attached at bases of the segments. Fruit a globose berry.

Smilacina stellata (L.) Desf. Stem $\frac{1}{2}$ to 2 ft. tall; rootstock stout; leaves lanceolate to oblong, tapering at apex, often partly or wholly folded, sessile, the base sheathing the stem, 2 to 5 inches long; raceme 4- to 20-flowered, pedicels spreading; perianth segments $\frac{1}{8}$ to $\frac{1}{4}$ in. long; stamens shorter than perianth segments; berry at first striped, becoming black.

Found in the higher altitudes of the Coast Range.

Smilacina sessilifolia Nutt. **Small false Solomon's seal.** Similar to *S. stellata* but with slender rootstock; leaves brighter green, generally flat, 2-ranked; raceme few-flowered; berry red.

Common in shady moist woods, especially near streams.

Smilacina amplexicaulis Nutt. **False Solomon's seal.** Stem 1 to 3 feet tall; leaves 2 to 6 inches long, ovate to oblong-ovate, acute at apex, sessile, the base clasping the stem or narrowed into the semblance of a petiole, minutely hairy or smooth; panicle 2 to 4 inches long; flowers very small, many, creamy white; berry red with dark dots.

Smilacina sessilifolia.
Small false Solomon's seal.

Common in moist shady woods.

Maianthemum. Webb.

Stem simple from a horizontal rootstock, bearing several leaves and raceme of small white flowers. Perianth segments 4, similar. Stamens 4. Ovary 2-celled. Fruit a red globose berry.

Maianthemum bifolium DC. var. **kamtschaticum** (Gmel.) Jepson. **Wild lily-of-the-valley.** Stem erect, bending at a slight angle at each node, 3 to 14 inches tall; stem leaves triangular, heart-shaped at base, 2-5 inches long, often long-tapering at the point; basal leaf long petioled, broadly heart-shaped, short pointed; raceme terminal, 2 inches or less long, bearing many small cream-colored flowers attached singly or several in each cluster; berry ¼ in. in diameter.

Maianthemum bifolium var. *kamtschaticum.*
Wild lily-of-the-valley.

Shady moist woods, mostly along streams.

Smilacina amplexicaulis.
False Solomon's seal.

Clintonia Raf.

Peduncle solitary, arising with several leaves from a creeping rootstock. Flowers solitary or borne in an umbel. Sepals and petals 6, similar, not at all united. Stamens 6, attached to bases of sepals and petals. Ovary 2- or 3-celled. Fruit a berry.

Clintonia uniflora.

Clintonia uniflora Kunth. Leaves 2 or sometimes 3, oblong to narrowly or broadly elliptic, conspicuously parallel-veined, mucronate, narrowed to a short petiole-like base; peduncle 4 in. or less long, shorter than the leaves, 1-flowered, with or without bracts; flower clear white, lily-like, bell-shaped; stamens shorter than sepals and petals.

Coniferous woods of the Coast Range and Cascades.

Scoliopus hallii.
Fetid adder's tongue.

Scoliopus Torr.

Peduncle very short, entirely below ground, sending up 1 to several pedicels between the 2 basal leaves, all from a short underground stem sheathed with leaf bases. Flowers small, ½ to ¾ in. in diameter, purplish and green, inconspicuous. Stamens 3, opposite the sepals. Ovary 3-angled, 1-celled, bursting irregularly in fruit.

Scoliopus hallii S. Wats. **Fetid adders tongue. Slink-pod.** Leaves 2, oblong-elliptic, obtuse and mucronate at apex, sheathing at base below the surface of the ground, 3 to 5 inches long; pedicels 1 to several, shorter than the leaves, 3-angled; sepals greenish, striped or mottled with purplish-brown, strongly turned backward at about the middle; petals narrow, incurved over pistil; style-branches 3, recurved; capsule sharply 3-angled, erect in flower but carried downward after flowering and more or less buried under dead leaves of the forest floor.

Odor of the flower faint, not very disagreeable. This flower is one of the earliest to blossom in the spring, having already begun to bury its seed-pods by the time most of the early flowers are out.

Coniferous woods.

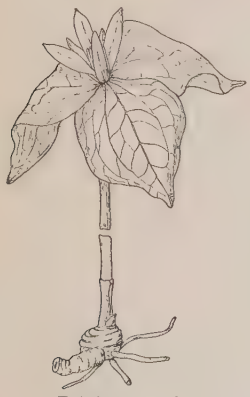
Trillium L. Wake Robin

Stem unbranched, from a stout vertical rootstock. Leaves 3, borne in a whorl at apex of stem. Flower solitary at center of leaf whorl. Sepals 3, green. Petals 3, larger than the sepals, white or pink or reddish purple. Stamens 6, shorter than the perianth segments. Ovary 3- or 6-angled, 3-celled at base, 1-celled with 3 projecting placentae at summit. Fruit a fleshy capsule, reddish or purplish.

Trillium ovatum.
Wood lily.

Trillium ovatum Pursh. **Wood lily.** Stem 8 to 12 inches tall; leaves broadly ovate, acute or tapering to a slender point at apex, abruptly narrowed at base; petals broad, obtuse or acute, pure white at first, changing to deep pink; capsule broad with narrow wings.

Moist shaded woods.



Trillium sessile var. *giganteum.*
Sessile trillium.

Trillium sessile L. var. **giganteum** H. and A. **Sessile trillium.** Stem 1 to 2 feet tall, sometimes several from one rootstock; leaves broadly ovate to nearly round, acute; petals slender, oblanceolate, yellowish or greenish to deep reddish purple; flower unstalked, arising directly from center of leaf whorl; capsule more or less 6-angled.

Moist shaded woods.

IRIDACEAE. Iris Family

Perennial herbs, smooth. Stems slender or stout, cylindrical, but appearing flattened at base through arrangement of leaves. Leaves grass-like, sheathing. Flowers one to several, generally showy. Sepals and petals colored. Stamens three. Ovary inferior. Capsule three-celled. Stigmas three.

Iris L.

Stems erect from stout creeping rootstocks. Leaves mostly basal, those on the stem generally reduced in length. Flowers

large, showy, solitary or several on a stem, borne in the axils of sheath-like bracts. Sepals colored (not green), spreading or turned backward. Petals erect. Style divided into 3 petal-like spreading branches, each 2-lobed at apex. Stigma a small triangular flap at base of lobes, beneath. Stamens 3, each closely appressed beneath a style branch. Capsule oblong, 3-angled.

Iris tenax.
Purple iris or flag.

Iris tenax Dougl. **Purple iris** or **flag.** Stems slender or rather stout, arising with many leaves from a fibrous-covered rootstock; basal leaves grass-like, 12 to 20 in. long, $\frac{1}{8}$ to $\frac{1}{4}$ in. wide, acuminate, conspicuously parallel-veined, equalling or exceeding the flowers; sepals reaching 3 in. in length, broad at summit, purple with yellow center, the whole sepal conspicuously veined with darker purple; petals narrower, erect, uniformly purple or lavender; style branches also purple or lavender.

Common and very showy in fields and road sides.

Sisyrinchium idahoense.
Blue-eyed grass.

Sisyrinchium L.

Stem flattened, sometimes bent at the nodes. Leaves grass-like. Flowers quickly wilting, produced in a few-flowered umbel from between 2 sheathing bracts. Sepals and petals similar, spreading. Filaments of stamens united into a tube. Stigmas 3.

Sisyrinchium idahoense Bicknell. **Blue-eyed grass.** Stems tufted, erect, 8 to 18 in. tall, longer than the leaves; leaves $\frac{1}{8}$ to $\frac{1}{4}$ in. wide; bracts enclosing the flowers unequal in length, one often twice the length of the other; sepals and petals from pale to dark blue or purplish, yellow at the base, 1- to 3-toothed at apex, the middle tooth conspicuously slender; capsule globose.

Common in meadows.

Hydastylus Dryand.

Annual or perennial herbs resembling **Sisyrinchium**, but styles not united for entire length.

Hydastylus borealis Bicknell. Resembling **Sisyrinchium idahoense**, but flowers golden.

Marshes and bogs on the coast.

ORCHIDACEAE. Orchid Family

Perennial herbs with sheathing leaves, these sometimes reduced to scales. Flowers irregular. Sepals 3. Petals 3, 2 alike, the third forming a lip, sometimes slipper-like, which is generally at lower side of flower. Stamens and style united to form "column." Ovary inferior, sometimes twisted, 1-celled with 3 placentae. Fruit a capsule, opening at maturity by 3 valves. Seeds numerous, minute.

Cypripedium L.

Stems erect, leafy, from a short horizontal rootstock bearing cord-like roots. Leaves 2 to many, the base of the stem enclosed in sheathing scales. Flowers one to several, generally large and showy, subtended by leafy or scale-like bracts. Sepals spreading, the 2 lateral nearly or quite united. The 2 upper petals similar to sepals. Lower petals large and sac-like. Fertile anthers 2, sterile anther 1, arched over stigma.

Cypripedium montanum. Lady's slipper.

Cypripedium montanum Dougl. **Lady's slipper.** Stem ½ to 2 ft. tall, rough—as are also the leaves—with short glandular hairs; leaves broadly elliptic to long-ovate, the lowermost sometimes 5 or 6 in. long; flowers generally 1 or 2, rarely more, on very short pedicels; the 2 upper petals somewhat narrower than the sepals, wavy, often twisted, sepals and upper petals all longer than lip, spreading, brown or purplish; lip large, white, purple-veined; ovary covered with short glandular hairs.

The whole plant has a characteristic subtle odor.

Coniferous woods.

Calypso Salisb.

Stem and single foliage leaf arising from a bulbous corm with thick roots. Stem short with several sheathing scale-leaves, bearing a single showy flower. The 3 sepals and 2 upper petals similar. Lower petal forming a sac-like or slipper-like lip. Column broad, petal like.

Calypso bulbosa (L.) Oakes. **Angel slipper. Fairy slipper.** Stem 4 to 7 in. tall, the sheathing scale-leaves 1 to 2 in. long; foliage leaf broadly ovate, 1½ to 3½ in. long, obtuse or sometimes acute at apex, heart-shaped or square-cut at base or occasionally

tapering into the petiole, conspicuously veined; petiole long, slender; sepals and petals deep reddish purple, becoming paler with age, rarely salmon color, ¾ to more than 1 in. long; lip generally slightly longer, pointed at apex with 2 lateral spurs, purple striped and mottled.

The flower has a delicately lovely fragrance. Plant grows in leaf mold of coniferous woods. Formerly very common, but rapidly being exterminated.

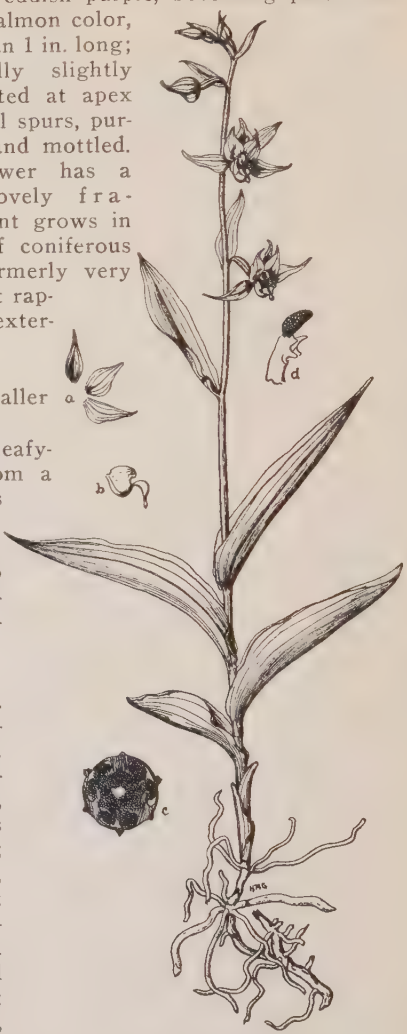
Calypso bulbosa.
Angel slipper.

Epipactis Haller

Plant leafy-stemmed from a creeping rootstock. Flowers in racemes, the lower bracts sometimes leaf-like. Flower with conspicuous lower lip which is narrowed at the middle. Capsules turned downward at maturity.

Epipactis gigantea Dougl. **Stream orchis.** Stem generally stout, ½ to 3 or more ft. tall; leaves long ovate, the upper narrower, mostly smooth, 2 to 6 in. long, the numerous parallel veins conspicuous; flowers generally few, distinct, in a raceme, each on a short pedicel; calyx greenish; corolla purplish, the lip darker and conspicuously veined; basal portion of lip concave winged; apical portion spreading, ridged.

Stream banks, rare.



Epipactis gigantea.
Stream orchis.

Listera R. Br.

Stem erect slender, bearing a single pair of broad, sessile opposite foliage leaves, with a sheathing scale-leaf at base of stem above rootstock. Flowers small, inconspicuous, in an open terminal raceme. Sepals and the 2 upper petals similar, slender. Lower petal forming the lip, longer and broader, 2-toothed or cleft at apex. Pollen masses 2. Capsule ovoid.

Listera convallarioides Torr. **Twayblade.** Stem ¼ to 1 ft. tall, hairy above the leaves; leaves broadly ovate to round, generally obtuse or rarely acute at apex, 1½ to 3 in. long; flowers greenish, 6 to 15, on rather long hairy pedicels; lip ¼ to ½ in. long, 2-lobed, toothed on each side of base.

Coniferous woods.

Listera cordata (L.) R. Br. **Twayblade.** Stem 3 to 8 in. tall, hairy above the leaves; leaves broadly ovate, heart-shaped at base, ¾ to 2 in. long; flowers greenish, yellowish, or purplish, very small; lip ⅛ to ¼ in. long, cleft to the middle into 2 very slender lobes, toothed on each side of base.

Coniferous woods.

Listera cordata. Twayblade.

Cephalanthera Rich.

Stem erect from a creeping rootstock, bearing a terminal raceme of flowers. Leaves (in ours) reduced to sheathing scales. The sepals and 2 petals similar, nearly equal in length, third petal forming the lower lip, 3-lobed. Column long. Pollen masses separate, above the stigma.

Cephalanthera austinae. Phantom orchis.

Cephalanthera austinae (Gray) Hel. **Phantom orchis.** Whole plant white, saprophytic, 8 to 20 in. tall; leaves 3 or more, forming wide-mouthed sheaths; flowers generally many; lip shorter than the other perianth segments, its middle lobe much broader than the lateral lobes, hinged, and 3 to 5 ridged; upper sepal and petals somewhat hooded over column.

Coniferous woods of Coast Range.

Corallorhiza R. Br.

Purplish, brownish, or yellow saprophytes (i. e., securing their food from dead organic material) or parasites. Roots branched, coral-like. Leaves scale-like, sheathing the stem. Flowers borne in a terminal raceme. Perianth segments nearly equal in length, 2 petals and the sepals similar, the third petal broader and forming the lower lip which is 1- to 3-ridged. Flower in some species spurred on lower side at base of perianth segments. Anther opening by a lid. Capsules reflexed after flowering.

Corallorhiza maculata. Spotted coral-root.

Corallorhiza maculata Raf. **Spotted coral-root.** Stem 8 to 15 inches tall, raceme 2 to 6 in. long; 2 petals and the sepals purplish-brown like the stem; lateral sepals forming a short spur with base of column; lower lip broad, with one wide central lobe and 2 narrow lateral ones, purple-spotted; capsule ¾ in. long, ¼ in. broad.

Moist coniferous woods.

Corallorhiza mertensiana Bong. **Purple coral-root.** Stem 8 to 20 in. tall; raceme 4½ to 8 in. long; peduncle deep purple; flowers red or purplish; spur short with free tip; lower lip broad, generally entire, dark red or purple; capsule ¾ in. long, ⅜ in. broad.

Moist coniferous woods.

Corallorhiza striata. Striped coral-root.

Corallorhiza striata Lindl. **Striped coral-root.** Stem 4½ to 20 in. tall, often several in a cluster together with remnants of last year's stems; raceme 1½ to 8 in. long; sepals and upper petals cream or flesh-colored with slender purplish stripes; spur none; lower lip broad, entire, with edges incurved, and with 3 broad purple stripes; capsule ½ to ¾ in. long.

Moist coniferous woods.

DICOTYLEDONS

Leaves commonly netted-veined. Flower parts generally in 4's or 5's. Stem of perennials increasing in diameter by the addition of annual rings. Embryo with 2 seeds.

BETULACEAE. Birch Family

Trees or shrubs with deciduous alternate leaves. Stipules early deciduous. Staminate catkins, long, slender, drooping. Pistillate catkins shorter. Ovary 2-celled. Fruit hard, 1-celled.

Alnus Hill.

Staminate and pistillate catkins borne in separate clusters, the staminate catkins drooping and falling after flowering, the pistillate catkins erect, becoming woody at maturity, and persisting until the next season's flowering. Staminate calyx generally 4-parted. Stamens 1 to several.

Alnus oregona.
Red alder.

Alnus oregona Nutt. **Red alder.** Tree 30 to 60 ft. tall, with smooth pale bark; twigs reddish; winter leaf buds gummy, stalked; leaves broadly ovate, elliptical, or obovate, somewhat pointed at apex, conspicuously veined, doubly serrate, mostly smooth, darker above than beneath, 2 to 12 in. long; pistillate catkins becoming woody, open cone-like, dark brown or black, ¾ to 1 in. long.

Common along streams.

CORYLACEAE. Hazel Family

Shrubs with alternate simple deciduous leaves. Staminate flowers in long slender catkins. Pistillate flowers clustered in a scaly bud. Ovary inferior. Stigmas slender. Fruit a nut, enclosed in enlarged bractlets which form an involucre about it.

Corylus L.

Catkins appearing before the leaves. Bractlets forming a close-fitting involucre about nut.

Corylus rostrata Ait. var. **californica** A. DC. **Western hazel.** Generally a tall shrub, 10 to 20 ft., sometimes lower; leaves roundish or obovate, rarely ovate, 1½ to 4½ in. long, often more or less lobed, finely toothed, roughish above, velvety beneath; involucre enclosing nut forming a sheath extending beyond it, usually densely covered with short stiff hairs below, sometimes nearly smooth.

Common.

FAGACEAE. Oak Family

Trees or shrubs with alternate simple leaves. Stamens and pistils borne in separate flowers. Petals absent. Staminate flowers in catkins. Pistillate flowers 1 to 3 surrounded by a cup-like arrangement of scales, at the base of staminate catkins or in very short separate catkins. Ovary inferior, 3-celled, each cell with 2 ovules at first, only 1 ovule maturing. Fruit a nut borne in cup of scales or in a bur.

Quercus L.

Trees or shrubs with hard wood. Flowers inconspicuous, greenish. Staminate catkins slender, pendant. Pistillate flowers borne above the staminate. Stigmas 3 to 5. Fruit an acorn.

Quercus garryana Dougl. **White oak. Oregon oak. Garry oak.** Sturdy tree, 25 to 50 ft. tall, with thin, whitish, deeply checked bark; leaves 2½ to 5 in. long (occasionally longer), leathery, dark green and shiny above, pale or rusty beneath with fine down, pinnately divided into 5 to 9 rounded mucronate lobes; acorn cup shallow, of overlapping swollen finely hairy scales; nut smooth and shining, rounded.

Hillsides and plains.

Castanopsis Spach.

Trees or shrubs with evergreen leaves. Catkins erect, sometimes branching, bearing staminate flowers in 3's, each with 6 to 12

stamens. Calyx 5- or 6-toothed. Pistillate flowers 1 to 3 in a cup of scales, these borne on the base of staminate catkins or on short separate catkins. Fruit a nut, 1 to 3 borne in a spiny bur.

Castanopsis chrysophylla. A. DC. **Giant chinquapin.** Shrub or tree, sometimes reaching height of 120 ft., round-topped; bark thick, furrowed; leaves oblong, narrow, 2¼ to 5¼ in. long, golden-brown to pale yellow beneath, with covering of minute scales, dark green above, tapering at both ends; burs spiny like those of chestnut on a small scale, containing 1 or sometimes 2 nuts.

Foot-hills of the Coast Range.

MYRICACEAE. Sweet-gale Family

Shrubs or small trees, with alternate, simple, fragrant, resinous-dotted leaves. Flowers in the axils of bracts in catkins. Sepals and petals absent, stamens and pistils in separate flowers. Pistillate flower surrounded by several small bractlets. Ovary superior, 1-celled. Stigmas slender, 1 to 4. Fruit a drupe or nut.

Myrica L.

Shrubs or small trees. Leaves generally toothed or lobed.

Myrica californica. Wax myrtle.

Myrica californica Cham. **Wax myrtle.** Shrub or small tree, closely branched, 5 to 30 ft. tall; leaves leathery, narrow, oblong, tapering at both ends, mostly toothed above the middle or sometimes entire, 2 to 5 in. long; catkins an inch or less long, in the leaf axils, the pistillate catkins above the staminate, or some catkins both staminate and pistillate; stamens 5 to 16, united by the filaments. Fruit nut-like, covered with wax.

Common near the coast.

URTICACEAE. Nettle Family

Annual or perennial herbs with simple alternate or opposite leaves. Flowers very small, greenish, imperfect, in axil-

lary spikes or heads. Sepals 2 to 5, nearly separate, or united. Petals absent. Ovary superior, 1-celled. Style and stigma 1. Fruit an akene, enclosed by the calyx.

Urtica lyallii. Nettle.

Urtica L.

Annual or perennial herbs with stinging hairs, and opposite petioled leaves. Stamens and pistils in separate flowers on the same plant (in ours). Staminate flower with 4 sepals attached under rudiment of pistil. Pistillate flower with 4 sepals in 2 pairs, the inner larger than outer, and enclosing the akene in fruit.

Urtica lyallii Wats. **Nettle.** Perennial with creeping rootstocks; foliage sparsely to profusely grayish-hairy; leaves broadly to narrowly ovate, heart-shaped at base, 1½ to 3 in. broad, with 5 to 7 prominent veins from base, coarsely toothed; spikes slender and clustered in the leaf-axils.

Mostly in shady moist places.

LORANTHACEAE. Mistletoe Family

Plants evergreen, parasitic or partially so on trees or shrubs. Leaves opposite, conspicuous or reduced to scales. Stamens and pistils in separate flowers on separate plants (in ours), flowers small and greenish, without petals. Ovary inferior, 1-celled. Fruit a berry with mucilaginous substance enclosing seed.

Phoradendron Nutt.

Stem woody, much branched. Leaves yellowish-green, leathery, large, or very small and scale like. Flowers borne in short spikes or racemes in the axils of the leaves. Calyx of staminate flower 3-lobed, anthers borne at base of lobes. Calyx of pistillate flower 3-toothed at summit of ovary. Berry semi-transparent.

Phoradendron villosum Nutt. **Common mistletoe.** Plant shrubby, sometimes becoming several feet in diameter on the branches of the host; bark corrugated; young stems and leaves

densely covered with short hairs forming a greenish velvety layer; leaves and stems at first yellowish green, becoming darker; leaves oblong to obovate, thick, 3 to 5 veins apparent on under surface, obtuse at apex, tapering at base to a short petiole; flowers in short racemes in leaf-axils; berries pearl-like, pinkish or flesh-color, slightly longer than broad, tipped by the 3 calyx lobes, very gelatinous beneath the skin.

The gelatinous substance in the berry causes the seeds to adhere to branches of trees where they have been carried by birds which eat the outer parts, thus insuring their planting on new hosts.

Common on Garry oak **(Quercus garryana** Dougl.).

SANTALACEAE. Sandalwood Family

Ours herbs or shrubs, often parasitic on the roots of other plants. Flowers generally greenish. Corolla none. Ovary inferior, 1-celled, the fruit nut-like, tipped by the persistent calyx-lobes.

Comandra Nutt

Herbs with rootstocks. Leaves alternate. Flowers small, in cymes. Calyx 5-lobed. Fruit dry, 1-seeded.

Comandra umbellata Nutt. **Bastard toad-flax**. Stems many, woody at base, from long slender woody rootstock, 4 to 14 in. tall, erect, or somewhat trailing with erect branches; leaves simple, entire, mucronate, oblong or elliptic, short-petioled at base or nearly sessile, green or pale; flowers about ¼ in. long, in terminal compound cymes, green with whitish tips; fruit globose, capped with calyx-lobes.

ARISTOLOCHIACEAE. Dutchman's Pipe Family

Herbs or twining shrubs with alternate simple heart-shaped leaves. Sepals 3, petal-like, partly united. Petals none. Ovary inferior, 6-celled.

Asarum L.

Perennial herbs with fragrant alternate-scaly rootstocks, with long-petioled foliage leaves in an apparent pair at tip, the flower borne between them on or near the surface of the ground.

Asarum caudatum Lindl. **Wild ginger.** Rootstocks with several alternate broad clasping scale-leaves, and near the tip 2 foliage leaves of nearly equal length; petioles 1½ to 8 in. long, somewhat hairy; blades round heart-shaped, palmately veined, deep green, somewhat thickish, minutely short-hairy, particularly on the veins; flowers borne singly between the 2 leaves, apparently in the axil of one of them; the 3 calyx lobes spreading, greenish to very dark purple, extended into long tails at the apex, the tube ½ in. or more wide, yellowish and purple striped within; stamens 12, more or less united with the pistil.

Asarum caudatum.
Wild ginger.

In shady moist woods. The fragrant rootstocks creep readily through the leaf mold, sending up at intervals their foliage leaves, the bases of which are generally beneath the soil surface. Here, too, originate the flowers which are usually hidden by the debris of the forest floor and by the leaves.

POLYGONACEAE. Buckwheat Family

Herbs or shrubs with simple leaves. Flowers small, bearing both stamens and pistils or only stamens or pistils. Sepals 5 or 6, partly united. Petals absent. Stamens 4 to 9. Ovary superior, 1-celled, 1-seeded. Styles or stigmas 2or 3. Fruit an akene, 3-angled or lens-shaped.

Polygonum L.

Herbs with entire alternate leaves, and tissue-like stipules forming sheaths on the stem. Pedicels jointed. Flowers red, white, or greenish. Calyx 5-cleft or parted (in ours).

Polygonum persicaria L. **Smart-weed.** Annual, with stems more or less prostrate at base and rooting at the nodes; leaves long, narrow, widest near middle, long-pointed at apex, tapering at base to very short petiole; sheaths veined, fringed at upper margin;

spikes short, erect, red or rarely white; stamens generally 6, shorter than the sepals.

In marshy places or along streams.

Polygonum bistortoides Pursh. Stems 1 to 2 or more ft. tall, bearing dense terminal spikes; basal leaves 6 to 12 in. long, ½ this length being petiole; blade of leaf oblong, acute at apex, abruptly narrowed at base, ⅜ to 1¼ in. broad, smooth above, more or less minutely hairy beneath; stem leaves reduced in size, the sheath as long as or longer than the blade; spikes 1 to 1½ in. long, ½ to ¾ in. broad; flowers pure white with anthers and base of calyx greenish; bracts papery, brown; flowers generally borne in pairs, one opening before the other.

Common in wet meadows at high altitudes, but also occasionally found in marshes in the Willamette Valley.

Polygonum aviculare L. **Knot-weed.** Annual, with long branching, wiry, mostly prostrate stems, producing flowers along nearly full length of stems; leaves green, oblong, narrow, acute at both ends, ¼ to ½ in. long; flowers very small, white or pinkish with green veins, borne in the leaf axils; stamens 8; styles 3, short.

Polygonum aviculare.
Knot-weed.

A common weed in gardens, but more often found in hard beaten paths and yards.

Rumex L.

Herbs, mostly perennial, some slightly woody at base, with alternate and basal leaves and grooved stems. Stipules somewhat sheathing, but sheaths generally early disappearing, wholly or partly. Flowers generally greenish, sometimes red or yellow, usually borne in successive crowded whorls. Sepals 6, united only at base, the 3 outer spreading, the 3 inner larger and later enclosing the akene, often bearing a callous grain on back. Stamens 6. Styles 3, bearing much-branched stigmas. Akene triangular.

Rumex occidentalis Wats. **Western Dock.** Stout, little branched, 2½ to 6 ft. tall; leaves thickish, long-ovate, mostly heart-

shaped at base, ½ to 1½ ft. long, the petioles of the basal leaves longer than the blade; flowers in a narrow dense panicle, becoming pinkish in fruit; sepals without teeth, and usually without callous grain.

Moist places.

(*a*). Leaf and fruit of *Rumex obtusifolius;*
(*b*). Fruit of *R. occidentalis;*
(*c*). Leaf and fruit of *R. crispus.*

Rumex crispus L. **Curly dock.** Stem stout, somewhat woody-appearing at base, 1½ to 4 ft. tall; leaves long, narrow, very wavy-margined, bluish-green; whorls of flowers dense, many, crowded; sepals enclosing the akene broad, 1/6 in. long, with entire margin, usually each sepal, or only 1 or 2, bearing a callous grain.

Common weed. Generally abundant about deserted buildings and yards.

Rumex obtusifolius L. **Bitter dock.** Slender, 3 or more ft. tall; lower leaves broadly ovate to ovate-oblong, somewhat wavy-margined, heart-shaped or truncate at base, reaching 6 in. in length; leaves gradually becoming narrower upward on the stem, those near the top tapering at both ends; whorls of flowers loose, not crowded; 3 inner sepals each bearing 3 to 5 teeth near base on each side; large grain 1, sometimes 2 small ones in addition.

A weed, rather common, sometimes troublesome.

Rumex acetosella. Red sorrel.

Rumex acetosella L. **Red sorrel. Sour dock.** Stems from creeping rootstocks; lower leaves somewhat arrow-shaped with 2 ear-like lobes at base; upper leaves smaller, narrower, without lobes; stamens and pistils borne on different plants; staminate panicle broad, yellowish, bearing an abundance of pollen; pistillate panicle narrower, red, the pistillate flowers somewhat smaller than the staminate; akene red, becoming dark brown at maturity, 3-angled, granular.

Very common. Prefers acid soil. The leaves are very acid, like rhubarb, which belongs to the same family.

CHENOPODIACEAE. Pig-weed Family

Herbs or shrubs, often fleshy or white-mealy, with alternate (rarely opposite) leaves, or none. Flowers very small, generally inconspicuous, with both stamens and pistils or either. Sepals separate or slightly united at base. Petals absent. Ovary superior, 1-celled, 1-seeded. Styles 2 or 3. Fruit an akene.

Chenopodium L.

Herbs, annual or perennial, with alternate petioled leaves, often mealy or scaly. Flowers inconspicuous, greenish, bearing both stamens and pistils, clustered in simple or compound axillary or terminal spikes. Sepals generally 5, united at base, persistent, usually enclosing the fruit. Stamens few. Ovary flattened. Styles generally 2. Fruit an akene.

Chenopodium album L. **Pig-weed. Lamb's quarters. Goose-foot.** Erect branching herb, 1 to 4 ft. tall, more or less white-mealy; leaves ovate, wedge-shaped at base, acute at apex, with 3 conspicuous veins at base, wavy or toothed-margined to irregularly lobed, or upper entire, lower surface whiter than upper; flowers small, in narrow spikes in the upper leaf axils and terminating the stem, the leaves gradually decreasing in size upward, becoming scales of the paniculate inflorescence.

A common garden weed.

PORTULACACEAE. Purslane Family

Herbs (ours) with fleshy leaves. Sepals generally separate, generally 2 (rarely more). Petals commonly 5, separate or slightly united at base, soon withering. Stamens few to many, opposite the petals when of the same number. Ovary generally superior, 1-celled, with a free-central placenta. Fruit a capsule, opening by valves or a lid.

Calandrinia H. B. K.

Small somewhat fleshy annuals (ours) with alternate leaves, and flowers in a leafy raceme or panicle. Sepals 2. Petals usually 5. Stamens 3 to 15. Style-branches 3. Capsule 3-valved. Seeds numerous.

Calandrinia caulescens. Red maids.

Calandrinia caulescens H. B. K. **Red maids.** Stems generally several to many from base, erect or somewhat decumbent, 2½ to 12 in. tall, mostly smooth; leaves oblanceolate, those at base tapering to a long petiole, upper stem leaves sessile or slightly narrowed at base, some fringed on margins, somewhat succulent; sepals broad at base, tapering rather abruptly to a pointed apex, sometimes short-fringed on margins; petals red or magenta; capsule enclosed by sepals.

Occasionally abundant in cultivated fields.

Montia L.

Small herbs, smooth and somewhat succulent, with alternate, opposite, or all basal leaves. Flowers in racemes or umbels, inflorescence not leafy. Sepals 2. Petals 5, sometimes unequal, separate or sometimes united at base. Stamens 3 or 5. Style branches 3. Capsule 3-valved. Seeds few.

Montia fontana L. **Water Montia.** Stems ½ to 7 in. long, weak, often rooting at the lower nodes, smooth; leaves opposite or the uppermost alternate, smooth, obovate to oblanceolate or oblong, lower petioled, upper sessile, slightly united at base, ⅜ in. long or often much shorter; flowers very small, in racemes; seeds minute, black, spiny (as seen under a lens).

Growing in the water of slow streams, or in margins of ponds, sometimes on soft muddy banks.

Montia linearis.

Montia linearis (Dougl.) Greene. Simple or branched, erect, 1 to 5 or 6 in. tall; leaves long, narrow, clasping the stem at base; racemes 4- to 10-flowered, the flowers mostly nodding in bud and again in fruit, all turned in same direction, making raceme 1-sided; sepals broad, white-margined; petals white or rarely pinkish, unequal, stamens 3, attached at bas-

es of small petals; seeds lens-shaped, margined, black, shining, very minutely "pebbled."

Somewhat shaded moist places.

Montia parvifolia. Small-leaved Montia.

Montia parvifolia (Moq.) Greene. **Small-leaved Montia.** Plants propagating by stolons which send up rosettes of small thick leaves, the flowering stems arising from the axils of the lower leaves; stems erect or somewhat spreading, 6 to 12 in. tall, somewhat fleshy, often reddish; leaves of rosette ½ to ¾ in. long, somewhat broad, acute at apex, narrowing at base to a petiole as long as the blade, fleshy, smooth; stem leaves becoming smaller above, fleshy, bearing bulblets in their axils; flowers in racemes, often several flowers arising from same point; petals white or pink, ¼ in. long, conspicuously 3-veined, notched at apex; stamens 5, anthers pink or lavender; seeds black, minutely warty as seen beneath a lens.

Moist banks and mossy rocks along streams.

Montia perfoliata (Donn.) Howell. **Miner's lettuce.** Stems several, arising with long-petioled leaves from base of plant, whole plant smooth and somewhat fleshy; basal leaves broadly ovate, acute at apex and tapering at base into long petiole, or narrowly lanceolate or oblanceolate to linear; stem leaves a single pair united into a round or 2-angled disk below flowers; flowers in scattered groups on raceme, or clustering at disk, white or pink.

Moist, shady woods.

Montia perfoliata. Miner's lettuce.

Montia perfoliata (Donn.) Howell var. **depressa** (Gray) Jepson. Plants mostly small, 1 to several in. tall, with clustered stems and leaves, very fleshy, whole plant often red; basal leaves broadly ovate; stem leaves often incompletely united, forming irregularly lobed or cleft disk; flowers in cluster at disk.

Moist places, sometimes in the open.

Montia sibirica (L.) Howell. **Candy flower.** Stems generally several, erect, 8 to 14 in. tall, arising in a tuft with long-petioled basal leaves from a short thick crown; leaves generally broadly ovate (rarely narrowly ovate or oblanceolate), the basal long-

petioled; stem-leaves 1 pair, immediately below the inflorescence, broad, mostly sessile; flowers subtended by a minute leafy bract; petals nearly ½ in. long, veined with pink or lavender, notched.

Montia sibirica.
Candy flower.

Common in moist woods.

CARYOPHYLLACEAE. Pink Family

Herbs with opposite leaves at often swollen nodes. Flowers regular, the calyx remaining with fruit. Sepals, petals, and stamens, 5 or 4, or stamens rarely 10 or fewer than 5, alternate with petals when not exceeding the number. Ovary superior, 1-celled. Styles 1 to 5. Placenta free-central. Fruit 1-celled, opening at the apex by teeth or valves, or not splitting.

Cerastium L.

Hairy herbaceous plants with white flowers in cymes. Sepals and petals 5, the latter notched. Stamens 5 or 10. Styles 5. Capsule cylindical, sometimes curved, opening at tip by 10 teeth to allow escape of seeds.

Cerastium arvense.
Field chickweed.

Cerastium arvense L. **Field chickweed.** Stems erect or matted, decumbent from slender rootstocks; leaves long-ovate to lanceolate, or lower obovate to oblanceolate, all sessile or nearly so, generally glandular-hairy; cyme terminal, often compound; calyx lobes narrow, glandular-hairy in center, thin and membranous on margins; petals white, showy, ½ in. long, deeply notched, twice as long as sepals; capsule scarcely longer than calyx.

Rather rare.

Cerastium viscosum L. **Annual mouse-eared chickweed.** Annual; stems erect, more or less branching, hairy, often sticky-glandular, particularly near the summit; leaves broadly or narrowly ovate to elliptic, sessile, slightly connected at bases around stem, hairy; petals shorter than sepals; capsule nearly twice as long as sepals, somewhat curved and narrowed at tip, the 10 teeth somewhat stout.

Common.

Cerastium vulgatum L. **Mouse-eared chickweed.** Perennial or sometimes biennial; stems mostly several to many from base, decumbent, densely hairy, glandular above; petals commonly longer than sepals; capsule slender, twice or thrice as long as sepals, somewhat curved, scarcely narrowed, the 10 teeth narrow.

Common.

Cerastium vulgatum. Mouse-eared chickweed.

Stellaria L.

Mostly smooth herbs with slender stems and opposite leaves. Sepals and petals 5, the latter 2-parted. Stamens 3 to 10. Styles 3 or 4. Capsule short, ovoid or broadly oblong, splitting into as many valves as the number of styles.

Stellaria media. Common chickweed.

Stellaria media (L.) Cyr. **Common chickweed.** Stems weak, decumbent, rooting at the lower nodes, often matted, generally with a single hairy line; leaves broadly ovate, acute at apex, long petioled below, sessile above; petioles hairy; flowers white, the pedicels turned backward in fruit; petals deeply 2-cleft, shorter than sepals; anthers reddish; capsule ovoid, slightly longer than calyx.

A garden weed, common. This is one of the earliest flowers to blossom in the spring, and a field of chickweed is nearly as fragrant as a field of white clover, and as popular with the bees.

Arenaria L.

Low annuals or perennials. Flowers white, in cymes, or axillary. Sepals and petals separate, 5, the latter entire or nearly so. Stamens 10. Styles 3. Capsule splitting into 3 entire or 2-toothed valves.

Arenaria macrophylla.

Arenaria macrophylla Hook. Stems very short-hairy, erect or weakly so, from slender running rootstocks, leaves long-ovate or elliptic to lanceolate, tapering at each end, very short-hairy to nearly smooth, deep green; flowers about ¼ in. in diameter, mostly in slender-stalked few-flowered cymes; sepals acute or acuminate, mostly longer than the petals.

Mostly coniferous woods.

Silene L.

Annual or perennial herbs, often sticky. Sepals united into a 5-toothed calyx. Petals 5, long-clawed, sometimes appendaged at junction with claw. Stamens 10, styles generally 3. Capsule opening by 3 or 6 teeth.

Silene hookeri Nutt. **Indian pink.** Slender rootstocks arising from crown of perennial root, give rise to 1 or more weakly erect or decumbent stems 2½ to 10 in. long; leaves mostly obovate or oblanceolate, long-tapering at base, acute or acuminate at apex, each pair united around stem by a thin membrane, gray-woolly to nearly smooth; flowers large, in terminal and axillary few-flowered cymes or solitary, deep cerise to pale pink, the petals deeply 4-cleft, spreading wheel-shaped, 1¼ to 1½ in. in diameter, the appendages in the throat conspicuous.

Silene hookeri.
Indian pink.

Common in open woods and on brushy hillsides.

Agrostemma L.

Annual. Flowers large, stalked. Calyx tube strongly 10-ribbed, 5-toothed, the teeth much elongated, exceeding the corolla. Capsule opening by 5 teeth.

Agrostemma githago L. **Corn cockle.** Stem erect, 2 ft. or less tall, long-hairy, with a few ascending branches or only flower stems; leaves long-lanceolate, sessile, connected at base around stem by a thin membrane; long-hairy, especially on margins; flower terminal, calyx-tube ribbed, long-hairy, teeth slender, ¾ to 1¼ in. long; petals broad, purplish red, showy.

Agrostemma githago.
Corn cockle.

NYMPHAEACEAE. Water-lily Family

Aquatic plants with tubers or creeping rootstocks. Leaves raised on erect petioles, or floating, with flexuous petioles,

blades peltate or heart-shaped. Flowers large, showy, solitary. Sepals 3 to 12. Petals and stamens few to many. Pistils 1 and many-celled, or several and 1-celled, superior.

Nymphaea. L.

Aquatic or partially aquatic plants with rootstocks. Leaves raised above the rootstock on long petioles. Sepals indefinite in number, mostly petal-like. Petals 10 to 20, smaller. Stamens many, outer ones similar to the petals. Ovary 10- to 25-celled, broad, fleshy, mostly disk-like above with the stigmas radiating from the center.

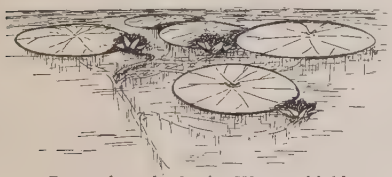
Nymphaea polysepala (Engelm.) Greene. **Pond lily.** Rootstock very thick and reaching several feet in length; leaves 8 to 15 in. long, 5½ to 11 in. broad, obtuse at apex but narrower than at base, deeply heart-shaped at base, petiole and mid-rib pithy; flower cup-shaped, 3 to 5 in. in diameter; sepals yellow or outer reddish, somewhat fleshy, 9 to 12, petal-like spreading; petals 12 to 20, small, fleshy, in a circle beneath and later nearly hidden by the stamens; stamens numerous, closely fitted together about pistil at first, later recurving; anthers dark, filaments yellow; stigmas 10 to 20, radiating in lines from center of scalloped disk.

Nymphaea polysepala. Pond lily.

Common in sloughs.

Brasenia Schreb.

Water plants with long-petioled oval, peltate, floating leaves, arising from creeping rootstocks. Flowers inconspicuous, purplish, with 3 or 4 sepals and petals and 12 to 20 slender stamens. Pistils 4 to 20, becoming pods.



Brasenia schreberi. Water shield.

Brasenia schreberi Gmel. **Water shield.** Leaf blades 2 to 4 in. long, green above, purplish beneath, the under sur-

face and the flexuous petioles generally covered with a slime; flowers ½ in. long.

Ponds, sloughs, and margins of slow streams.

RANUNCULACEAE. Buttercup Family

Mostly herbs, with alternate or basal leaves (or stems woody below, with opposite leaves), generally with acrid juice. Flower parts all distinct. Sepals 2 to 5, sometimes petal-like. Petals 5 or more, or absent. Stamens generally numerous. Pistils several (rarely 1), superior, 1-celled. Fruit usually dry, rarely fleshy.

Coptis Salisb.

Small herbs with basal leaves and flower stems from slender rootstocks. Rootstocks and roots a deep golden yellow beneath the bark. Leaves compound. Flowers white, 1 to 8 in an umbel. Sepals petal-like, 5 or more. Petals narrow below, broadened above, hooded, 5 or more. Stamens 10 to many. Pistils stalked, 10 or more. Fruits, stalked follicles.

Coptis laciniata. Gold-thread.

Coptis laciniata Gray. **Gold-thread.** Peduncles generally 2- or 3-flowered, sometimes 7- or 8-; leaves divided into 3 leaflets; leaflets generally 3- to 5-lobed, cleft, or divided and sharply toothed; sepals thread-like or somewhat broader, ¼ to ½ in. long; petals shorter, narrow; follicles inflated, ½ in. long.

Caltha L.

Perennial herbs with basal leaves. Flower stalks bearing 1 to 2 blossoms. Rootstock vertical or horizontal, thick, with papery bud scales. Sepals 5 to 10, white, bluish, or yellow. Petals absent. Stamens many. Pistils 5 to many. Seeds borne in rows at inner angle of pistils. Fruits dry.

Caltha biflora DC. **White marsh marigold.** Leaves and flower stalks arising from base, 3 to 10 in. tall; leaves somewhat thick, kidney-shaped, broader than long, with low teeth, the basal lobes

turned upward at first; flowers 1 to 1½ in. broad, showy, white; sepals 5 to 10, oblong, petal-like; petals absent; fruits short-stalked.

In marshes and shallow ponds in the mountains.

Actaea L.

Perennial herbs with leaves twice or thrice divided into 3's. Stems with 1 or 2 leaves, arising from short root-stocks, bearing a terminal raceme of small white flowers. Sepals indefinite in number, often 4, petal-like. Petals indefinite or none. Stamens many, white, showy. Pistil 1, becoming a berry.

Actaea spicata var. *arguta.*
Baneberry.

Actaea spicata L. var. **arguta** Torr. **Baneberry.** Stems 1 to several from base, 1½ to 3½ ft. tall; leaves all borne on the stem above ground, ¾ to 2¼ ft. long; leaflets mostly broad, ovate, appearing palmately veined, coarsely lobed and toothed, often asymmetrical at base, 1½ to 3 in. long; occasionally short lateral racemes in axils of upper leaves, in addition to longer terminal raceme; sepals creamy white or their tips pink-tinged; petals variable in number, or none; berries red or white, straight on one side, curved on the other.

Aquilegia formosa.
Columbine.

Shady moist places. The berries are somewhat poisonous.

Aquilegia L.

Perennial herbs with mostly basal leaves divided in 3's, and flowers solitary in the leaf axils. Sepals petal-like. Petals spurred at base. Stamens many. Pistils 5, becoming follicles.

Aquilegia formosa Fisch. **Columbine.** Stems 1½ to 3½ ft. tall, generally from dense tuft of basal leaves; sepals and spurs of petals deep scarlet (rarely crimson); blade of petals yellow; flowers mostly nodding.

Delphinium L.

Herbs with palmately lobed or divided leaves, and irregular flowers in terminal racemes. Sepals 5, generally petal-like, the upper one spurred at base. Petals 4, in 2 dissimilar pairs, the upper pair spurred, the nectar-bearing spurs enclosed by the spur of upper sepal. Pistils 3 (ours), many-seeded, developing into follicles.

Delphinium menziesii. Field larkspur.

Delphinium menziesii DC. **Field Larkspur.** Stem erect, 7 to 20 in. tall, arising from a custer of more or less globose or elongated tubers, nearly smooth or more often minutely hairy, the hairs sometimes becoming glandular at the base on the peduncles; basal leaves generally short-hairy, roundish in outline, ¾ to 2 in. in diameter (rarely 3), palmately cleft nearly to the base, the segments again cut into narrow lobes, the lobes callous-tipped; segments of upper leaves narrower and fewer; racemes mostly few-flowered (rarely many); sepals dark purplish-blue, somewhat hairy; lower petals purplish, upper generally white or veined with purple; follicles generally hairy, rarely smooth, erect or spreading.

Common in fields and on hillsides. Poisonous to cattle and horses.

Delphinium menziesii DC. var. **ochroleucum** T. and A. **White larkspur.** Like. **D. menziesii,** but sepals cream colored or dirty white; 2 upper petals blue or purple, lower cream-colored or sometimes purple tinged.

Delphinium trolliifolium. Wood larkspur.

Delphinium trolliifolium Gray. **Wood larkspur. Poison larkspur.** Stem coarse, hollow, 2 to 6 ft. tall, smooth or minutely hairy above, arising from elongated roots; basal leaves cut three-fourths of distance to base into 5 to 7 broad segments, these coarsely toothed; upper leaves cut into fewer, narrower, and generally deeper segments, mostly smooth or slightly hairy on the veins, 3½ to 6 in. in diameter; raceme generally many-flowered; flowers deep clear blue, the spur generally curved, often somewhat wrinkled transversely.

In moist open woods and along their margins. Poisonous to cattle and horses.

Anemone L.

Perennial herbs with rootstocks. Basal leaves arising from the rootstock. Stem leaves forming a single whorl of 3. Sepals 5 or more, petal-like. Petals absent. Stamens many. Pistils many, developing into akenes.

Anemone deltoidea Hook. **Wind-flower.** Stems 5 to 12 in. tall, from long thread-like creeping rootstocks; basal leaves long-petioled, divided into 3 leaflets, each short-stalked and coarsely toothed; stem leaves undivided, coarsely toothed, broadly ovate; 1½ to 3 in. long; sepals generally 5, creamy white ½ to 1 in. long; akenes somewhat inflated, hairy, with short straight styles; flower 1 to 2 in. broad.

Anemone deltoidea. Wind-flower.

Shady moist woods.

Anemone quinquefolia L. var. **grayi** (Greene) Jepson. **Small Wind-flower**

Plants small, generally 2 to 5 in tall, rarely taller, from deep, long, somewhat thick creeping rootstocks; basal and stem leaves divided into 3 leaflets; basal leaf on petiole nearly as high as plant, leaflets with distinct stalks; petioles of stem leaves ½ in. long, more or less, leaflets short-stalked; sepals generally 5, petal-like, blue, pink, lavender, or white; flowers ¼ to ½ in. broad.

Anemone quinquefolia var. *grayi.* Small wind-flower.

Moist shady woods.

Thalictrum L.

Erect perennial herbs, stems arising from a rootstock. Leaves 2 or 3 times compound. Flowers very small in panicles or racemes, usually with stamens and pistils on different plants. Sepals sometimes petal-like. Petals none. Stamens numerous, with slender filaments. Akenes 4 to 15, grooved or ribbed, sometimes inflated.

Thalictrum occidentale Gray. **Meadow-rue.** Plants 1 to 3 ft. tall; leaves ternately compound; leaflets ½ to 1½ in. long, deeply

3-lobed at apex, lobes often coarsely toothed; staminate flowers greenish, tassel-like, filaments hair-like, sometimes purplish; pistils usually 5 or 6, styles deep red; akenes slightly oblique, ⅓ to ½ in. long, ribbed, spreading or turning backward in fruit.

Thalictrum occidentale.
Meadow-rue.

Moist shady places.

Ranunculus L.

Annual or perennial herbs. Flowers in corymbs or solitary, generally yellow (rarely white or pink). Sepals and petals generally 5, the latter with a nectar pit covered by a scale, at base. Stamens usually many. Pistils many, becoming akenes, the seed attached at base.

Ranunculus repens L. **Creeping buttercup.** Perennial; stems prostrate at base, creeping, rooting at nodes; leaves more or less stiff-hairy, the blades somewhat triangular in outline, the lower generally divided into lobed and toothed leaflets, on long petioles; upper leaves lobed; flowers ½ to 1 in. or more broad, spreading saucer-shaped, deep gold.

In marshy places, particularly near the coast.

Ranunculus repens.
Creeping buttercup.

Ranunculus flammula var. *reptans.*
Creeping spearwort.

Ranunculus flammula L. var. **reptans** Schlecht. **Creeping spearwort.** Stems very slender, rooting at all or most of the joints; leaves long, narrow, broadest near apex, tapering at base to long petiole; flowers small, pale yellow.

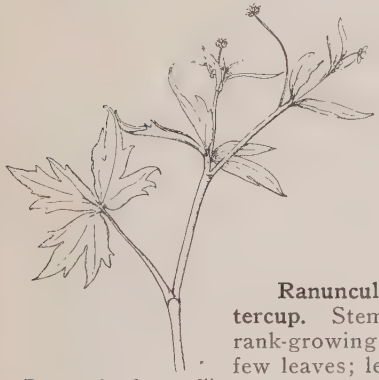
Margins of lakes and streams.

Ranunculus alismaefolius Geyer. Stems stout, more or less hollow, erect, somewhat branching, ¾ to 1¾ ft. tall, mostly smooth;

leaves 2 to 6 in. long, slender, lanceolate, the basal long-petioled, stem leaves short-petioled or sessile, margins entire or rarely somewhat toothed; flowers deeply saucer-shaped, deep yellow; petals rounded; stamens and pistils forming compact ball in center; akenes short-beaked, the beaks somewhat in-curved.

Marshes.

Ranunculus alismaefolius.



Ranunculus bongardii. Woods buttercup.

Ranunculus bongardii Greene. **Woods buttercup.** Stems 1 to 2 ft. or more tall, often rank-growing with coarse hollow stems and few leaves; leaves 3-parted, the segments commonly lobed or coarsely toothed, or upper leaves narrow and entire, short-hairy; flowers small, inconspicuous; petals pale yellow to white, often 1 or more missing; akenes smooth or with a few hairs, the beak strongly curved backward into a hook.

Moist woods, particularly along streams.

Ranunculus occidentalis. Field buttercup.

Ranunculus occidentalis Nutt. **Field buttercup.** Stems generally several from base, erect, $\frac{1}{3}$ to $1\frac{1}{2}$ ft. tall, with spreading hairs, or nearly smooth; basal and lower stem leaves hairy, cut half-way to base or deeper into broad segments, these lobed and toothed; upper cauline leaves entire or cut into narrow entire segments; flowers saucer-shaped, $\frac{1}{2}$ to $\frac{3}{4}$ in. in diameter, deep yellow, 5-petaled; akenes with short beaks curved slightly backward at tips.

Common everywhere in open fields.

Ranunculus orthorhynchus Hook. **Bird-foot buttercup.** Stems generally several from base, arising from cluster of long-petioled basal leaves, erect, hairy or nearly smooth: leaves pinnate, with 3 to 5 leaflets, the lateral opposite or often irregularly placed; leaflets of upper leaves mostly narrow, entire, of lower leaves broad or narrow, more or less 3-lobed or irregularly toothed; generally densely hairy on petioles and lower surface of blades, sometimes nearly smooth; flowers large, bright yellow; petals somewhat narrow, ½ to ¾ in. long, sometimes purplish brown beneath; akenes thickish, the nearly straight beak longer than body.

Ranunculus orthorhynchus.

Common in marshy places.

Ranunculus aquatilis L. **Water buttercup.** Perennial, growing entirely under water except flowers and stem tips, or rarely some floating leaves; floating leaves broadly 3-lobed, the lobes toothed; submerged leaves many times divided into thread-like segments; flowers white, ¼ to ½ in. broad, the petals thin and translucent; sepals and generally styles falling away; style awl-shaped; akenes 10 to 20 in a compact globose head, wrinkled transversely, usually with short hairs.

Ranunculus aquatilis.
Water buttercup.
a. Leaf of *R. lobbii.*

Ponds, slow streams, and lake margins.

Ranunculus lobbii Gray. **Leafy water buttercup.** Annual with mostly floating leaves cut into 3 spreading oblong lobes, notched or entire; submerged leaves when present like those of **R. aquatilis**; style long, thread-like; akenes 3 to 6, wrinkled.

Slow streams and pools.

BERBERIDACEAE. Barberry Family

Shrubs or herbs with alternate compound leaves (ours). Flowers with both stamens and pistils. Sepals 6 or absent. Petals 6 or absent. Stamens generally 6, opposite the petals. Anthers opening by an uplifted valve. Pistil one, superior, 1-celled. Fruit dry or fleshy.

Berberis L.

Evergreen shrubs, or low plants shrubby at base, with alternate spiny leaves and yellow wood. In ours, the leaves pinnately compound. Flowers in racemes, yellow, each subtended by 3 small petal-like bractlets. Sepals petal-like. Stamens sensitive. Stigma disk-like. Fruit fleshy.

Berberis aquifolium. Oregon Grape.

Berberis aquifolium Pursh. **Oregon Grape.** Shrub erect, bushy, 2 to 6 ft. tall; leaves stiff, leathery, bright green and shining above, paler beneath, generally with 5 or 7 leaflets (rarely 9); leaflets long-ovate, 1½ to 3 in. long, the margin with sharp slender spines; racemes clustered in the leaf-axils and at apex of stem, making a dense showy inflorescence 2 to 4 in. long; fruits blue, grape-like.

Common.

Berberis nervosa. Mountain Oregon grape.

Berberis nervosa Pursh. **Mountain Oregon grape.** Low, slow-growing shrubs, stems ¼ to 2 ft. tall, showing scars of preceding years' growth; leaves long, slender, with 11 to 21 leaflets; leaflets broad- to long-ovate, thick, leathery, with slender spines on margin, and with 5 to 7 prominent veins arising from base; racemes slender, 3 to 7 in. long, several arising from one bud; bud scales prominent, persistent for several years, long-ovate, tapering to a long

point; yellow flowers sometimes tinged with rose or purplish; fruits blue with a white waxy coating.

Common in the Coast Range and Cascades, occurring generally at higher altitudes than **B. aquifolium.**

Achlys DC.

Perennial herbs with leaves and flower-stalks arising from a creeping rootstock. Leaves long-petioled, palmately divided into 3 leaflets. Flowers very small, crowded in a spike raised on a long peduncle. Sepals and petals absent. Stamens and pistils present. Stamens indefinite in number. Fruit dry.

Achlys triphylla.
Vanilla-leaf.

Achlys triphyll (Sm.) DC. **Vanilla-leaf.** Leaves and flower-stalk 1 to 1½ ft. tall; leaflets narrow at base, broad at apex, wavy-margined, 3 to 6 in. broad; fruits crescent-shaped.

Shady moist woods.

The foliage has a sweet vanilla-like odor when dried.

Vancouveria Morr. and Dec.

Low perennial herbs (or somewhat woody at base) from slender rootstocks. Leaves once or twice divided into 3's, mostly or all from base of plant. Flowers nodding, in a panicle. Sepals petal-like, turned backward, in 2 series of 3's, with 6 or 9 small bractlets at base; petals 6, turned backward, each with a hood-like nectar gland near apex. Stamens 6, erect, enclosing pistil, the filament extending beyond the separate anthers. Style and stigma 1. Fruit dry, 1-celled, splitting to allow escape of seeds.

Vancouveria hexandra.
Inside-out flower.

Vancouveria hexandra (Hook). Morr. and Dec. **Inside-out flower.** Flower-stems 9 to 20 in. tall; flowers cream-colored; leaves shorter than flower-stems, sparsely hairy; leaflets somewhat heart-shaped at base, broadest above middle, mostly 3-lobed; bractlets, stamens, and pistils covered with

small stalked glands. Follicle somewhat crescent-shaped, with style persistent.

In shady woods or under thick shrubbery.

PAPAVERACEAE. Poppy Family

Herbs or shrubs with watery juice. Sepals 2, 3, or 4, sometimes united into a cap early falling away. Petals twice as many as sepals. Pistil 1, compound, or rarely several simple pistils. Ovary superior, 1- to several-celled.

Eschscholtzia Cham.

Annuals or perennials, with leaves several times divided into 3's. Flowers yellow to orange. Receptacle cup-like, surrounding base of pistil. Sepals united into a cap which is pushed off as petals unfold. Stamens many, more or less grouped on base of petals. Ovary slender, cylindrical, ribbed. Styles generally 4 in 2 unequal pairs. Capsule 2-valved, 1-celled, many-seeded.

Eschscholtzia californica. California poppy.

Eschscholtzia californica Cham. **California poppy.** Stems erect or sometimes spreading, generally leafy, arising from tuft of basal leaves; leaves several times divided into very narrow segments, bluish green, with peculiar odor when bruised; receptacle with an outer spreading and an inner erect rim; petals attached inside spreading rim, yellow or deep orange, broadest at apex, satiny in texture; capsule slender, 1 to 4 in. long, tipped by withering styles, with rim persistent at base.

Common.

FUMARIACEAE. Bleeding-heart Family

Perennial herbs (ours), smooth, with alternate compound leaves. Flowers irregular, bearing both stamens and pistils. Sepals 2, very small. Petals 4, inner pair generally narrower than outer, united at tip over stamens and pistil. Stamens 6, in 2 sets of 3's, opposite outer petals, filaments of each 3 generally united. Fruit a 1-celled capsule.

Dicentra Bernh.

Flowers in racemes or panicles (ours). Corolla somewhat flattened, heart-shaped at base or slightly spurred. Petals narrowed at apex and generally hooded or crested. Filaments of each set generally united in middle, free above and below.

Dicentra formosa.
Bleeding heart.

Dicentra formosa (Andr.) DC. **Bleeding heart.** Leaves and flower-stem from a creeping fleshy scaly rootstock; leaves on long petioles, divided twice into 3's, the leaflets cut into narrow segments, juice watery; flowers 3 to 10 or more on a peduncle taller than the leaves (10 to 20 in. tall); corolla pink to pinkish lavender, ¾ to 1 in. long, broad.

Moist shady woods, mostly near streams.

Corydalis Vent.

Leaves pinnately 2- or 3-times divided. Flowers in racemes. Flowers 1-spurred.

Corydalis scouleri Hook. Plant 1½ to 2½ ft. tall, rank-growing, foliage bluish-green; leaves several times divided and lobed pinnately, the final lobes oblong, narrow; flowers pink in dense 1-sided bracted raceme, each flower 1-spurred, the spurs all pointing in approximately the same direction; corolla 1¼ in. long from tip of spur to tip of lobe.

Rather local in distribution. Found in creek bottoms in Northern Willamette Valley, and along Columbia.

CRUCIFERAE. Mustard Family

Herbs with alternate (rarely all apparently basal) leaves, and the flowers in racemes. Flower-parts in 4's, separate. Petals entire or cleft, spreading or turned backward at nearly right angles in the form of a cross. Stamens generally 6 (rarely 4 or 2), commonly 4 long and 2 short, the long stamens opposite the petals, the short ones alternate with them, on opposite sides of the flower. Fruit a 2-celled capsule which splits

to allow escape of seeds, or 1-celled and not splitting, or breaking transversely into 1-seeded sections. Seeds in 1 or 2 rows in each cell.

Sisymbrium L.

Erect annuals with pinnately parted or compound leaves and small flowers. Pod cylindrical, not beaked, style none or very short.

Sisymbrium officinale. Hedge mustard.

Sisymbrium officinale (L.) Scop. **Hedge mustard.** Stem stiffly erect, 1 to 4½ ft. tall, with ungainly spreading branches above, somewhat stiff-hairy; leaves slightly rough-hairy, pinnately parted or divided, with a large terminal toothed segment; leaves petioled, not clasping at base; pods ½ to ¾ in. long, very slender, tapering to tip, erect, closely appressed to stem.

Common in waste places.

Barbarea R. Br.

Perennial herbs with angular stems. Leaves pinnately parted, usually with large terminal segment. Flowers yellow. Pod slender, somewhat 4-angled.

Barbarea orthoceras var. *dolichorcarpa.* Winter cress.

Barbarea orthoceras Ledeb. var. **dolichocarpa** Fernald. **Winter cress.** Stems erect, 8 to 18 in. tall, mostly smooth, dark green or often dark purplish; leaves all pinnately parted, clasping at base, with very large terminal segment and small unequal irregularly placed lateral segments, smooth, dark green ,somewhat succulent; flowers small, yellow, many; pods linear, erect or somewhat spreading, narrowed to very short style.

Rather common along roadsides and on waste ground.

Arabis L.

Annuals, biennials, or perennials. Sepals generally much shorter than the petals, 2 somewhat spurred at base. Pods flattened parallel with partition.

Arabis hirsuta (L) Scop. **Hairy rock cress.** Biennial; stem erect, mostly unbranched, somewhat stiff-hairy, bearing a raceme of white flowers at the summit; basal leaves oblong, narrowed at base to short winged petioles;

stem leaves long-ovate, the upper becoming narrower, nearly erect, with ear-shaped projections at base, entire or coarsely dentate, all more or less short-hairy; flowers small, very slender, erect.

Found occasionally on sunny sandy bluffs along the coast or above rivers.

Radicula Hill.

Herbs growing mostly in the water or in wet places. Leaves toothed, or pinnately lobed or divided, mostly smooth. Styles very short, stigma rounded. Pod cylindrical, slender, with minute seeds in 2 rows in each compartment.

Radicula nasturtium-aquaticum. Water cress.

Radicula nasturtium-aquaticum (L.) Britt. and Rendle. **Water cress.** Stems erect or decumbent and rooting at lower nodes, smooth, generally rank-growing; leaflets ovate or elliptic to nearly round, the terminal leaflet largest; flowers white, ⅛ in .long, the raceme somewhat showy; pods spreading.

In slowly flowing streams and in marshes.

Radicula curvisiliqua (Hook.) Greene. **Yellow cress.** Stems 1 to many from base, erect or spreading, 4 to 18 in. long, often purplish; leaves pinnately cleft or parted, the segments narrow, or broader and lobed or toothed, green or purplish, ½ to 3 or 4 in. long, or basal longer; flowers minute, yellow, borne in racemes at the ends of branches; pods ¼ to nearly ½ in. long, slender, curved upward, abruptly narrowed to a very short style.

Radicula curvisiliqua. Yellow cress.

Common in spring pools and marshes.

Cardamine L.

Erect herbs (ours) with stems leafy their entire length. Leaves entire or generally parted or divided, sometimes basal leaves in a rosette. Flowers very small or rarely large and showy, white. Pods slender.

Cardamine oligosperma. Nutt. **Bitter cress.** Stems simple or branching, 2 to 15 in. tall, smooth or very short-hairy, arising from

a basal rosette of leaves; leaves pinnately compound; leaflets mostly roundish, 5 to 11, ⅓ in. or less long (rarely more), with a single tooth on each side near apex, or the terminal leaflet sometimes 2 or more toothed on each side, all the leaflets short-stalked; pods slender, 6 to 20 seeded, ½ to 1 in. long, on pedicels ⅕ in. long or less.

Shady moist places.

Leaf of *Cardamine oligosperma.* Bitter cress.

Cardamine pennsylvanica. Bitter cress.

Cardamine pennsylvaniva Muhl. **Bitter cress.** Stems simple or branched, 5 to 20 in. tall, generally smooth; leaves pinnately compound; leaflets 7 to 13, those of lower leaves roundish, upper mostly elongated ,generally sessile; pods slender, 20- to 30-seeded, on pedicels ½ in. long or less.

Shady moist places.

Cardamine angulata Hook. **Wood bitter cress.** Stem weakly erect, usually simple, from a running rootstock; leaves with mostly 3 (sometimes 5) segments or leaflets, these nearly equal in basal leaves, smooth or short-hairy, palmately veined, toothed or lobed; upper leaves with terminal segment larger; flowers ½ in. long or more, white, showy.

Moist woods, rather rare.

Cardamine angulata. Wood bitter cress.

Dentaria L.

Smooth perennials with stems and basal leaves from a tuberous rootstock. Stem leaves 1 to 2 or 3, near the inflorescence. Pod long-cylindrical, flattened parallel to the partition.

Dentaria tenella. Spring beauty.

Dentaria tenella Pursh. **Spring beauty. Small toothwort.** Stems 4 to 9 in. tall, erect, or tips of racemes somewhat curved, bearing a few-flowered terminal raceme subtended by 1 leaf (rarely more than 1 stem leaf); stem leaf 3- to 5-parted, the segments narrow, mucronate; basal leaf generally somewhat distant from stem, long-petioled, nearly round in outline, often purplish beneath, sometimes purple-spotted above, with 5 to 7 mostly rounded lobes, these callous-tipped, sometimes notched; petals pink or lavender to nearly white, ⅜ to ½ in. long.

Open woods, or fields and hillsides without trees but shaded by smaller vegetation.

Dentaria macrocarpa.
Large toothwort.

Dentaria macrocarpa Nutt. **Large toothwort.** Stem 6 to 12 or more in. tall, with terminal raceme; stem leaves 2 or more, 3- or more often 5-pinnately parted or compound, the segments or leaflets broad and somewhat lobed or coarsely toothed, or narrow with mostly entire margins, conspicuously mucronate and callous-tipped; basal leaf mostly 3-parted or compound, rarely 5-parted, the segments generally broad and more or less lobed; petals at first creamy white, changing to pink and lavender, mostly $\frac{1}{2}$ to $\frac{3}{4}$ in. long.

Open woods, rather rare.

Brassica L.

Annuals, smooth or with scattered stiff hairs. Lower leaves pinnately parted or divided, with large terminal segment. Upper leaves becoming entire. Sepals and petals yellow, the latter alternating at base with 4 minute dark green glands. Pod cylindrical, with stout beak. Seeds globose, in 1 row in each cell, or in 2 rows.

Brassica campestris.
Wild turnip.

Brassica campestris L. **Wild turnip. Yellow mustard.** Stems erect, $\frac{1}{2}$ to 6 ft. tall, with few branches; lower leaves pinnately parted, with large terminal and small lateral segments, irregularly toothed, broadly clasping at base, usually with scattered stiff hairs from cushion-like bases on upper surface; leaves becoming less divided upward, until entire with broad clasping bases, tapering toward apex, succulent and generally bluish-green and smooth; flowers $\frac{1}{2}$ to $\frac{2}{3}$ in. long, golden yellow, very fragrant; pods spreading, stout, cylindrical, $1\frac{1}{2}$ to $2\frac{1}{2}$ in. long, the seeds in 2 rows in each compartment, the 2 placentae divided by the false partition.

Very common. A garden and grain-field weed. The ancestor of the rutabaga.

Brassica nigra (L.) Koch. **Black mustard.** Stems 2 to 6 ft. tall, sometimes much taller, dark green, mostly smooth; leaves all

petioled, the lower pinnately parted or divided, with a very large lobed and sharply toothed terminal segment, and small lateral segments or leaflets; leaves less lobed upward, sometimes becoming entire; petals narrow-clawed, longer than the sepals; pods erect, appressed closely to stem, irregularly cylindrical, slightly 4-angled.

Brassica nigra. Black mustard.

Fields and roadsides, not as abundant as **B. campestris.**

Draba L.

Small plants with white or yellow flowers in racemes. Capsule flat, oval to oblong, with seeds in 2 rows.

Draba verna L. **Whitlow grass.** Stems 1½ to 4 or 5 inches tall, mostly leafless, arising from a basal rosette of leaves; leaves oval to obovate, distantly toothed, tapering into a petiole at base or sessile, ¼ to ½ in. long; petals cleft to the middle, twice as long as the sepals; capsule oval, the 2 valves falling away early in fruit, leaving the partition membrane.

Common on hillsides in spring ,making conspicuous white patches in moist places when in blossom, in spite of the diminutive size of the individual plant.

Capsella bursa-pastoris. Shepherd's purse.

Capsella Medic.

Annuals with pinnately-parted leaves and minute white flowers. Pods several-seeded, more or less flattened, elliptical or broadly heart-shaped at apex.

Capsella bursa-pastoris (L.) Moench. **Shepherd's purse.** Stems erect, 3 to 20 in. tall, somewhat hairy, arising from a rosette of basal leaves; lower leaves petioled, spreading at base, pinnately cleft or parted with the terminal lobe largest, or rarely entire; upper leaves not cleft, toothed or entire, broadly clasping at base; pods flattened perpendicular to the partition, broadly heart-shaped, ¼ in. or less wide.

A common weed of waste land and gardens.

Raphanus L.

Annuals or biennials with lower leaves pinnately compound or parted, the terminal lobe or leaflet larger than the lateral. Pod

thick, spongy within, more or less constricted between seeds, not splitting longitudinally to discharge seeds, but sometimes breaking transversely.

Raphanus sativus L. **Radish.** Stems coarse, branching, 1½ to 5 ft. tall, smooth or sparsely hairy; lower leaves pinnately parted, with several small lateral segments, the terminal much larger and round, segments wavy-margined or with low rounded teeth; upper leaves toothed, undivided or with a few small lateral segments; petals purple or white, the veins conspicuous, ¾ in. long; pods 1 to 3 in. long, 1 to 3 seeded, slightly constricted between seeds, usually inflated on 1 side, straight on the other, narrowed abruptly to a long beak.

Common in waste places. The garden radish "run wild."

Raphanus raphanistrum L. **Jointed charlock.** Plant somewhat similar to **R. sativus,** but hairy below, smooth above, with yellow flowers, and long very narrow pods deeply constricted between seeds like a string of beads, long-beaked.

Less common than **R. sativus.**

DROSERACEAE. Sundew Family

Herbs with perennial glandular leaves arranged in a rosette. Flowers white. Ovary superior, 1-celled. Fruit a capsule opening by 3 valves.

a. Drosera rotundifolia. Sundew.
b. Leaf of *D. longifolia.*

Drosera L.

Plants reddish or brownish. Leaf long petioled, the blade covered with sensitive glandular hairs which act as insect traps. Flowers borne in a slender 1-sided raceme. Sepals 5, united at base. Petals 5, separated or united at base. Styles 2 to 5, generally deeply 2-parted.

Drosera rotundifolia L. **Sundew.** Rosette of leaves lying close to the ground; leaf-blades roundish, fringed with red glandular hairs; flowering stalks 3½ to 8½ in. tall; sepals nearly as long as petals.

In bogs along the coast and in the mountains.

Drosera longifolia L. **Narrow-leaved sundew.** Leaf-blades narrow, broader at apex. Sepals ½ as long as petals.

Bogs in the mountains.

CRASSULACEAE. Stone-crop Family

Smooth fleshy herbs. Leaves entire (ours). Flowers regular, small, borne in cymes or rarely singly. Sepals or petals sometimes slightly united at base. Sepals and petals generally 5. Fruits consisting of as many follicles as petals, sometimes united at base.

Sedum L.

Perennial herbs (ours), generally low, spreading mat-like, with flowers in cymes. Petals 5, separate or slightly united. Stamens 10. Seeds borne in follicles, several to a flower and separate or slightly united at base.

Sedum spathulifolium Hook. **Broad-leaved stone-crop.** Plants fleshy, with stolons which send up rosettes at intervals and take root. Leaves thick, fleshy, spatulate, glaucous, those on the stem shorter than in rosette and thicker. Decumbent stems arising from rosette, often reddish (also stem leaves sometimes), bearing open cyme of flowers. Cyme bracted, bracts fleshy. Sepals 5, glaucous, whitish, united at base. Petals 5, yellow, narrow, twice as long as sepals or more. Stamens 10, 5 opposite petals and attached to them, 5 opposite sepals and attached to calyx at base. Carpels 5, free or perhaps slightly united at base, spreading, narrowing to slender styles with capitate stigmas. Fruits, many-seeded follicles.

In crevices of rocks.

Sedum spathulifolium.
Broad-leaved stone-crop.

SAXIFRAGACEAE. Saxifrage Family

Perennial herbs or shrubs. Flowers containing both stamens and pistils, solitary, or borne in cymes, panicles, or ra-

cemes. Sepals partly united into a 5-lobed calyx. Petals generally 5. Stamens often 5 or 10, sometimes fewer or numerous. Ovary inferior or superior, 1- to 5-celled, the number of stigmas equalling the number of placentae. Fruit dry orfleshy.

Saxifraga L.

Herbs with leaves mostly or entirely basal. Flowers small, in loose or compact panicles. Stamens 10. Styles 2. Ovary inferior or sometimes nearly superior. Fruit a 2-beaked capsule, or the 2 halves sometimes nearly separate as follicles.

Saxifraga caespitosa. Tufted saxifrage.

Saxifraga caespitosa L. **Tufted saxifrage.** Stem producing short perennial branches densely covered with leaves, the dead brown leaves remaining on the previous year's growth; leaves generally 3-lobed, the lobes narrow and often again lobed; stem leaves few, becoming smaller and entire upward; leaves and stem covered with very short glandular hairs; flowers 4 or 5 near summit of stem, $\frac{1}{2}$ in. or less broad; calyx-lobes united to somewhat above base, glandular-hairy; petals twice as long as calyx, thickish, white, broad, slightly notched at apex, mostly 3-veined; stamens 10, those opposite the petals longer; ovary almost completely inferior, 2-beaked.

Moist places along the coast and on the Columbia River.

Saxifraga nuttallii. Nuttall's saxifrage.

Saxifraga nuttallii Small. **Nuttall's saxifrage.** Annual; stems very slender, weakly erect, 3 to 10 in. tall, smooth; leaves ovate or oval, entire or 3-toothed, petioled below, $\frac{1}{8}$ to $\frac{1}{2}$ in. long, becoming smaller upward, the petioles reduced; flowers slender-stalked, white, the petals each with 3 pink stripes near the base; follicles united at base, spreading above.

On wet banks and rock crevices. Rather rare.

Saxifraga oregana Howell. **Marsh saxifrage.** Leaves in a basal rosette, spreading, oblong, often broadest above middle, narrowed at base into short petioles, smooth or hairy, rather thin, 2 to 9 in. long, margins entire or somewhat toothed; flower stalks erect, glandular, 1 to 3 ft. tall, bearing small white flowers in a dense panicle.

In marshes and other moist places.

Saxifraga integrifolia Hook. **Broad-leaved saxifrage.** Leaves in a basal rosette, often lying close to ground, oblong or ovate, narrowed rather abruptly to a sheathing base, smooth or hairy, thickish, 2 or 3 in. long, margins obscurely dentate; flower stalks erect, glandular, ½ to 1¼ ft. tall, bearing white flowers in a dense panicle.

Moist fields.

Saxifraga odontoloma Piper. Leaves all basal, smooth, roundish or oblong, 1½ to 3 in. broad, coarsely toothed, petioles generally longer than blades; flower stalk ⅓ to 1½ ft. tall, bearing a loose panicle of small white flowers.

Along streams in mountains.

Saxifraga odontoloma.

Peltiphyllum Engler.

Tall coarse herbs with thick scaly rootstocks from which the flower stalks develop before the leaves. Leaves long-petioled, the blades peltate. Flowers white or pinkish in cymes taller than the leaves. Stamens 10. Pistils 2, nearly separate, joined at base to calyx. Fruit a follicle.

Peltiphyllum peltatum.

Peltiphyllum peltatum (Torr.) Engler. Flower stalks 1 to 4⅓ ft. tall, appearing before the leaves are well open; flowers ½ in. or more in diameter, white or slightly pinkish in large compound cymes; leaf-blades ⅓ to 2 ft. broad, 7- to 15-lobed, irregularly toothed, on petioles 1 to 4 ft. tall.

On the margins of and in shallow streams of the Coast Range.

Tiarella L.

Perennial herbs. Flowers small, white, in a simple or compound raceme. Petals entire, narrow, inconspicuous. Stamens 10. Ovary united with calyx only at base, 2-beaked the beaks continuing into long slender styles. Fruit a thin capsule, the valves unequal.

Tiarella unifoliata Hook. **Cool-wort.** Stems 1 to several, 9 to 20 in. tall, arising with basal leaves from scaly rootstock; leaves

palmately 3- to 5-lobed, toothed, heart-shaped at base, sparsely hairy, the basal long-petioled; stem-leaves few, short-petioled; flowers small, white, in narrow, loose panicles; stamens longer than calyx or corolla.

Tiarella unifoliata. Cool-wort.

In springy places in the woods.

Tiarella trifoliata L. **Three-leaved cool-wort.** Resembling **T. unifoliata,** but the leaves divided into 3-lobed and toothed short-stalked leaflets.

Tiarella trifoliata. Three-leaved cool-wort.

Grows in similar locations.

Lithophragma Nutt.

Perennial herbs with tubers. Stem unbranched, bearing several white or pink flowers in a raceme. Stem-leaves few. Basal leaves several. Petals attached to calyx-tube. Stamens 10, short. ovary united to calyx at base, 1-celled, with 3 parietal placentae. Styles 3, short.

Lithophragma parviflora (Pursh) Nutt. **Ragged starflower.** Stems 1 to several, slender or rarely somewhat stout, 6 to 12 in. tall, often reddish, short-hairy, glandular above; basal leaves 1 in. or less broad, roundish in outline, 3-parted nearly to the base, the segments lobed and toothed, short-hairy, petioled, the petiole dilated at base into papery stipules; stem-leaves generally 1 or 2, mostly triangular in outline, deeply 3-parted, lobed and toothed, the ultimate segments narrow, the petioles short; flowers 3 to 8 in a terminal raceme; calyx top-shaped, spreading at the lobes, densely hairy; petals white or pink, $\frac{1}{4}$ to $\frac{3}{8}$ in. long, deeply cut into 3 (rarely 5) narrow lobes.

Lithophragma parviflora. Ragged starflower.

Tellima R. Br.

Herbs with creeping rootstocks. Stems unbranched. Flowers in racemes. Petals white, often changing to pink or red, narrowly toothed, turned backward. Stamens 10. Ovary inferior, with 2 parietal placentae. Styles 2.

Tellima grandiflora (Pursh) Dougl. **Fringe-cups.** Stems 1 to several, 1½ to 2½ ft. tall, from a basal cluster of leaves; basal leaves roundish in outline, somewhat shallowly 5- to 7-lobed, the lobes irregularly toothed, heart-shaped at base, the petioles long and long-hairy, the blades sparsely hairy, 2½ to 4 in. broad; flowers in long, slender, nodding terminal, 1-sided racemes; calyx inflated; fringed petals turning backward, white to red.

Tellima grandiflora. Fringe-cups.

Banks of shaded streams.

Mitella L.

Differs principally from Tellima in having fewer than 10 stamens (5 in ours). Leaves generally all basal (stem-leaves present in **M. caulescens** Nutt).

caulescens. Mitella Leafy-stemmed bishop's cap.

Mitella caulescens Nutt. **Leafy-stemmed bishop's cap.** Stems 6 to 15 in. tall; basal leaves thin, long-petioled, roundish in outline, 3- to 7-lobed, stiff-hairy, 1½ in. or less broad; stem leaves similar, smaller, with shorter petioles; flowers very small in slender raceme; petals greenish, very narrow, pinnately fringed.

A delicate little plant growing in moist, shady woods.

Mitella ovalis Greene. **Small bishop's cap.** Similar to **Mitella caulescens,** but leaves thickish, all basal, the veining conspicuous on the under surface.

Moist shady woods.

Mitella ovalis. Small bishop's cap.

Heuchera L.

Herbs with rootstocks. Leaves mostly basal. Flowers in small cymes in a panicle-like arrangement. Petals very small, white or none. Stamens 5. Ovary partly inferior, 2-beaked, 1-celled, with 2 parietal placentae.

Heuchera micrantha Dougl. **Small-flowered alum-root.** Leaves few or many, mostly basal, long-petioled, the leaf blades generally

2 to 4 in. long, roundish or oval in outline, with 5 to 11 rounded lobes (or the terminal lobe somewhat pointed), the lobes round-toothed, bordered with short stiff-hairs; upper surface of blade nearly smooth, under surface somewhat hairy; petioles reddish-hairy; flower stalks minutely glandular; flowers very small in loose panicles bearing cyme-like clusters; calyx top-shaped, hairy, with 5 small lobes; petals white, slender strap-shaped, curled.

Heuchera micrantha. Small-flowered alum-root.

Generally found in moist places; particularly abundant near the coast.

Heuchera glabra Willd. **Smooth alum-root.** Leaves long petioled, mostly basal; leaf blade thin, roundish in outline, with 5 to 9 sharply-toothed lobes; surface nearly smooth, green and shining above, paler beneath; petiole slender, smooth or slightly hairy; 3 or 4 leaves on stem, similar to basal leaves, gradually reduced in size and length of petiole upward; flowers small in an open panicle with cyme-like clusters, the stalks glandular-hairy; calyx top-shaped, 5-toothed, glandular below; petals white, mostly longer than calyx, slender, broader above.

Rocky cliffs in mountains.

Heuchera chlorantha Piper. **Tall alum-root.** Leaves all basal, the blades roundish to kidney-shaped, heart-shaped at base, with 7 to 9 broadly rounded and toothed lobes; surface smooth except for hairs on the veins beneath; petioles brown-hairy; flower-stalks sometimes 3 ft. tall, hairy; flowers in a dense spike-like panicle; calyx top-shaped below, broader above, greenish; petals very small or absent.

Moist places.

Heuchera ovalifolia Nutt. **Glandular alum-root.** Whole plant densely and minutely glandular; leaves many, all basal, somewhat long-stalked, the blades 1½ to 2 in. long, mostly longer than wide, thickish, more or less 5-lobed, the lobes rounded and round-toothed; flowers in spike-like panicles; calyx top-shaped at base, spreading above, densely glandular, often purplish at base, greenish above, and subtended by purplish bracts; petals none.

In rocky places on Mt. Hood.

Tolmiea T. and G.

Perennial herbs with mostly basal leaves. Flowers in a terminal raceme. Calyx tube-like, slender, with 2 large and 3 small

lobes, cleft down one side. Petals 4 or 5, thread-like, attached to calyx tube. Ovary superior, elongated, narrowing gradually at apex into slender styles. Capsule 2-beaked.

Tolmiea menziesii (Pursh) T. and G. **Youth-on-age.** Stems usually several from base, erect, 1½ to 2½ ft. tall, few-leaved, ending in a long raceme, somewhat hairy; leaves palmately veined, somewhat triangular in outline, deeply heart-shaped at base, 5 to 13 lobed, the lobes coarsely toothed, sparsely short-hairy, bearing at the base of the blade a bud from which new plants may develop; flowers slender, purple or brownish.

At margins of streams in shady woods. The common name of the plant refers to the bud found on the old leaf.

Tolmiea menziesii. Youth-on-age.

Chrysosplenium L.

Low herbs, ours perennial. Flowers inconspicuous, greenish, generally solitary in the leaf axils. Calyx 4-lobed. Petals absent. Ovary partly inferior. Capsule 1-celled.

Chrysosplenium glechomaefolium Nutt. **Golden saxifrage.** Stems many, weak, prostrate at base and rooting at the nodes, the tips ascending; leaves opposite below, alternate above, leaf-blades ¼ to nearly 1 inch long, semi-circular to nearly circular in outline, with rounded teeth above square-cut base; flowers greenish yellow, ⅛ in. or less wide; stamens 8; capsule 2-beaked.

Shady moist ground.

Philadelphus L.

Shrubs with opposite leaves which fall in autumn. Flowers white, in ours terminating the branches in simple or compound cymes, showy. Calyx-lobes 4 or 5. Petals 4 or 5. Stamens numerous. Ovary inferior, 4-celled (in ours). Fruit a capsule which splits into 4 valves.

Philadelphus lewisii Pursh var. **californicus** Gray. **Mock orange. Syringa.** Shrub 5 to 12 ft. tall, branching; leaves opposite, ovate, smooth to somewhat hairy, having 3 to 5 conspicuous veins from near the base, leaf margins entire to slightly toothed; flowers fra-

grant, in cymes; calyx lobes markedly mucronate; petals creamy white, ¾ in. long.

Philadelphus lewisii var. *californicus.* Mock Orange.

Common. One of the most beautiful shrubs of the Pacific Coast.

Ribes L.

Shrubs, mostly without spines or prickles, a few species bristly. Leaves palmately veined, generally lobed. Flowers in racemes. Calyx-lobes, petals, and stamens, 5. Pedicels jointed below ovary. Ovary not spiny, sometimes glandular, inferior, 1-celled. Placentae 2. Fruit a berry.

Ribes sanguineum Pursh. **Red-flowering currant.** Shrub erect or bushy with slender stems, 3 to 8 ft. tall; bark thin, brown; leaves roundish in outline, 3- to 5-lobed, irregularly toothed, conspicuously veined, deep green above, paler and hairy beneath, glandular at first, stipules remaining glandular; flowers deep red to nearly white; calyx glandular-hairy below; berry bluish-black with whitish waxy coating, and stalked glands.

Ribes sanguineum. Red-flowering currant.

Common in the Coast Range foothills.

This is one of our most beautiful shrubs, both in flower and in fruit.

Ribes laxiflorum Pursh. **Coast trailing currant.** Shrub erect or trailing, 3 to 5 ft. tall; leaves 5-lobed, 2 to 4 in. in diameter, smooth and shining dark green above, paler beneath, sometimes hairy on veins below; racemes 8- to 15-flowered; flowers greenish, saucer-shaped, inconspicuous; berries black with a waxy coating and stalked glands.

Moist places in timber and burned-over areas, particularly in the Coast Range.

Ribes lacustre (Pers.) Poir. **Swamp currant. Prickly currant.** Erect or prostrate, 3 to 5 ft. tall, the stems bearing weak spines at nodes, and sometimes prickly between; leaves 1 to 2 in. broad, smooth, deeply divided into 3 to 5 lobes, these again lobed or

toothed; racemes erect at first, later drooping, 5- to 15-flowered; calyx saucer-shaped, green to purplish; petals minute, fan-shaped; stamens very short, attached at bases of calyx lobes; berry black, bearing stalked glands.

Common, generally growing in moist places.

Ribes bracteosum Dougl. **Stinking black currant.** Shrub 5 to 10 ft. tall, or in shade, 12 to 15 ft., erect or straggling; leaves 4 in. or more in diameter, 5- to 7-lobed, irregularly toothed, heart-shaped at base, glandular beneath; racemes narrow, mostly erect, 5 to 15 in. long; flowers greenish, inconspicuous, saucer-shaped; berries black, glandular, with whitish waxy coating.

Found in shaded moist places, particularly in the foot-hills of the Cascades and Coast Range.

Grossularia (Tourn.) Mill.

Shrubs, erect or trailing, the stems bearing simple or 3-forked spines at the nodes, rarely spineless. Flowers solitary or in few-flowered racemes. Pedicels not jointed.

Grossularia divaricata (Dougl.) Coville and Britton. **Coast black gooseberry. Straggly gooseberry.** Shrub 6 to 10 ft. tall, with long straggling branches, spines at nodes large and long, straight or curved, brown or purple; bristles between nodes rarely present; leaves 1 to 2½ in. broad, sometimes broader than long, hairy above and on margin, sparsely hairy on veins beneath, 3- to 5-lobed, the lobes rather regularly toothed; racemes 2- to 4-flowered, with slender pedicels and peduncle; flowers reddish or purplish, inconspicuous, bell-shaped, calyx-lobes shorter than stamens and style-branches; berry black, smooth.

Along streams in Cascade and Coast Range foot-hills and near the coast.

Grossularia menziesii (Pursh) Coville and Britton. **Coast prickly-fruited gooseberry.** Shrub 5 to 6 ft. tall, erect, spreading; spines at nodes 1- to 3-forked, straight, long, stout, sharp; bristles abundant on young shoots; leaves square-cut or heart-shaped at base, with 3 to 5 lobes, these toothed or cut into smaller lobes, 1 to 1½ in. broad; leaves very hairy on the veins below and covered between veins with stalked glands, sometimes slightly hairy above; flowers solitary or in 2's, drooping, showy, purple, the pedicel and young ovary glandular; berry purplish, densely covered with weak bristles, some gland-tipped.

Glossularia lobbii (Gray) Coville and Britton. **Gummy gooseberry.** Shrubs 2-6 ft. tall, erect, spreading; spines straight, stout, found only at nodes, 3-forked; stems and leaves sparingly clothed with glandular hairs; leaves ½ to 1½ in. broad, the under surface and petioles somewhat gummy from glands; flowers solitary or in 2's, large, showy, purplish red, with stamens extending beyond calyx lobes; berry densely covered with glandular hairs, very gummy.

Grossularia lobbii. Gummy gooseberry.

Open slopes and burned-over areas in the Cascades and Coast Range.

Grossularia cruenta (Greene) Coville and Britton. **Shiny-leaved gooseberry.** Shrub 4 to 6 ft. tall, erect, spreading, bearing spines only at nodes, young twig sometimes slightly hairy; leaves somewhat leathery, ½ to 1 in. broad, smooth and shiny; flowers solitary or in 2's, purplish-red, showy, calyx-lobes shorter than styles but slightly longer than stamens; berries densely spiny, spines sharp and stiff, brown or purple.

Foot-hills of the Cascades in Lane county and southward.

ROSACEAE. Rose Family

Trees, shrubs, or herbs, with usually alternate leaves. Stipules generally present, at least at first. Flowers regular, generally with both stamens and pistils. Sepals partly united, forming a 5- or 4-lobed calyx. Petals 5 or absent. Stamens 10 or more, attached with the petals to the calyx tube. Pistils simple, 1 to many, free from the calyx; or compound and united with the receptacle and calyx. Fruit dry or fleshy.

Physocarpus Maxim.

Shrubs with deciduous leaves and thin reddish bark. Flowers white in corymbs or heads. Calyx lobes 5. Petals rounded, 5. Stamens 20 or more. Pistils 1 to 5, generally 3, somewhat united at base. Fruits dry, inflated, several-seeded.

Physocarpus capitatus (Pursh) Ktze. **Nine-bark.** Straggly shrub 3 to 8 ft. tall; leaves broadly ovate, more or less 3-lobed, toothed, smooth or with minute star-shaped hairs beneath (seen under a lens), 1½ to 3 in. long or larger.

Common along streams.

Physocarpus capitatus. Nine-bark.

Spiraea L.

Shrubs with simple deciduous leaves and no stipules. Flowers very small, white or pink, in dense panicles or corymbs. Stamens 10 to numerous, projecting beyond corolla. Fruits dry, several-seeded.

Spiraea douglasii Hook. **Hardhack.** Erect shrub 3 to 6 ft. tall, bushy, with reddish bark; leaves oblong, toothed above the middle, green above and generally sparsely hairy, whitish beneath and minutely woolly; panicles 2 to 6 in. long, pyramidal, appearing powdery from the minute anther-tipped projecting stamens; flowers rose-pink to purplish, pleasantly fragrant.

Common in the borders of marshes, and occasionally found in drier situations.

Holodiscus Maxim.

Shrubs with deciduous toothed or lobed leaves and no stipules. Flowers very small, white or cream, in dense panicles. Stamens 20. Fruits dry, 1-seeded, hairy.

Holodiscus discolor (Pursh) Maxim. **Ocean spray**. Shrubs 3 to 6 ft. tall; leaves ovate, green above, smooth or sparsely hairy, whitish and hairy beneath, ¾ to 2½ in. long, very coarsely toothed above base; panicle large, pyramidal, erect or somewhat drooping.

Common.

Aruncus L.

Erect perennial herbs. Leaves 2 or 3 times divided. Flowers white, minute, borne in a large plume-like panicle. Stamens and pistils on different plants. Fruit a follicle, usually 2-seeded, generally 3 follicles to a flower.

Aruncus sylvester Kost. **Goat's beard. Sea-foam.** Two to 4 ft. tall, smooth; leaflets 1½ to 4 in. long, ovate to ovate-lanceolate, obtuse at base, long-pointed at apex, irregularly and coarsely toothed; flowers very small; sepals united at base, reddish-brown, minute; petals larger, cream-colored; stamens much longer than petals, attached to calyx.

Aruncus sylvester. Goat's beard.

In shady moist woods and logged-off lands. Often seen growing on new road grades ,or on the upturned roots of spruces unearthed by storms. A valuable addition to the wild garden.

Rubus L.

Shrubs, sometimes trailing or climbing, prickly or smooth. Leaves simple and lobed or pinnately compound. Calyx 5-parted. Petals 5. Stamens many. Pistils many, united into a thimble-like covering over the elongated receptacle, forming an aggregate fruit of many individual drupelets.

Rubus parviflorus Nutt. **Thimbleberry.** Erect shrub, 4 to 7 ft. tall; leaves palmately 5-lobed, deeply cordate at base, raggedly toothed, densely or sparsely covered with hairs, the veins, petioles, and stems generally glandular, blade 3 to 8 in. broad; flowers 4 to 8 in a loose terminal corymb, white, 1½ to 2 in. broad; calyx-lobes broad, abruptly narrowed to a long appendage; petals large, obtuse; thimble-like fruit scarlet, sweet.

Common along streams and in open woods. One of our most attractive shrubs in foliage, blossom, and fruit. Has a pleasing fragrance in the rain.

Rubus parviflorus. Thimbleberry.

Rubus spectabilis Pursh. **Salmon-berry.** Shrub erect with long sparingly branched stems 4 to 10 ft. tall, with thin reddish shreddy bark and few prickles, or young stems very prickly; leaves divided into 3 leaflets, these more or less lobed and coarsely toothed, with prominent veins; flowers red (rarely nearly white), borne singly

or in clusters of 2 or 3 in the leaf axils and at ends of branches, or on very short axillary branchlets, sometimes appearing before the leaves unfold; fruit thimble-shaped, yellow at first, often becoming dark red.

Along streams. Common.

Rubus leucodermis Dougl. **Black-cap.** Shrubs straggling at time of flowering; old stems strikingly light bluish or lavender colored, due to a waxy coating over the red bark; leaves divided into 5 to 7 leaflets the first year, the second year's leaves with 3 leaflets; stems, petioles, pedicels, and sometimes the leaf veins bearing stiff, broad-based, recurved spines; leaflets broadly ovate, coarsely toothed, mostly green above, paler beneath and covered with soft down; flowers solitary or in several-flowered corymbs in the leaf axils or at ends of lateral branches, white; sepals longer than petals; fruit black with a whitish waxy coating, sweet and mild-flavored.

Rather common, often associated with **R. macropetalus**.

Rubus laciniatus Willd. **Evergreen blackberry.** Perennial shrub with long, trailing, very sharply and densely spiny stems; leaves divided into 3 to 15 leaflets, or simple near the branch tips, the simple leaves and leaflets cut into long slender lobes, these sharply toothed; flowers white or pinkish, borne singly in the leaf-axils or in terminal panicles; sepals much longer than the petals; fruit shining black with large drupelets and coarse bony centers commonly called "seeds."

An escape from cultivation which has become widespread and abundant in certain localities.

Rubus vitifolius C. and S. **Wild Blackberry.** Biennial shrub with stems somewhat woody, trailing or climbing, prickly, 3 to 24 ft. long; leaves with 3 to 5 leaflets or some simple and lobed; leaflets ovate, coarsely toothed, hairy or nearly smooth; flowers ¾ to 1¼ in. in diameter, white, the buds fuzzy with short white hairs, and sparsely glandular; fruits shining black, sweet and fine flavored.

Common. Particularly abundant in "burns" and logged-off areas, the tree stumps forming supports for the vines.

Fragaria L.

Perennial herbs, with leaves, flower stems, and stolons or runners produced from a scaly rootstock, the scales being the remains of stipules and petiole bases. Leaves with 3 leaflets. Flowers white, rarely pink or pinkish, borne in cymes on leafless stems (a leaf-like

bract sometimes present). Calyx remaining with fruit, 5-lobed, with 5 alternate bractlets. Petals broad. Flowers often of only 1 sex. Stamens 20 or more. Pistils many, borne on enlarged receptacle; style attached at side of ovary. Fruit formed from the fleshy receptacle, with seed-like akenes in numerous pits on its surface, or nearly superficial.

Fragaria cuneifolia Nutt. **Wild strawberry.** Plant growing 1 to 4 in. tall, more or less spreading, often nearly flat against surface of ground ,especially in pastures; leaves generally taller than flower stalks, conspicuously netted with veins, upper surface of blade dark green and smooth, lower surface and petioles densely silky-hairy; leaflets ½ to 1½ in. long, coarsely toothed near apex and on lower margin of lateral leaflets; flower stems and calyx covered with long silky hairs; flower stems generally leafless; fruits often ripening against the ground; akenes embedded in receptacle; ripened receptacle nearly globose, deep dark shining red, with sweet rich flavor.

Common everywhere in open fields and on hillsides.

Fragaria bracteata Heller. **Wood strawberry.** Plant erect, flower stems 4 to 8 or 10 in. tall, generally longer than the leaves, bearing a leaf-like or leaflet-like bract at base of inflorescence; whole plant more or less silky-hairy; leaflets coarsely toothed; fruits light red, oblong, borne on erect stalks, sweet with a mild flavor.

Common in open woods.

Fragaria chilensis (L.) Duch. **Coast strawberry.** Plant 1 to 7 or 8 in. tall; leaves dark green and shining above, very hairy beneath and on petioles; flowers large, showy; fruit ½ to nearly 1 in. in diameter; akenes sometimes embedded in receptacle, but often near the surface.

Sand-dunes and bluffs along the coast.

Potentilla L.

Annual or perennial herbs, or shrubs, with compound leaves. Flowers solitary or in terminal cymes. Calyx 5-lobed, with alternate bractlets. Pistils several to many, simple, borne upon an enlarged receptacle and becoming akenes. Styles falling away after flowering.

Potentilla anserina L. **Silver-weed.** Leaves and flower-stems forming a tuft at summit of roots, from which grow long runners

rooting at the nodes; leaves pinnately compound, 3½ to 8 in. long, dark green or reddish and shining above, white-silky beneath; leaflets 11 to 21, elliptical to obovate, slender-toothed, alternating with very small ovate leaflets; flowers single, long-stemmed, saucer-shaped, ¾ to 1¼ in. broad, golden yellow; sepals often reddish; petals rounded; receptacle hairy.

Potentilla anserina. Silver-weed.

Moist places, particularly near the sea.

Potentilla gracilis. Dougl. **Five-finger. Cinquefoil.** Stems brown-scaly at base, erect from a woody crown, 1 to 2 ft. tall, with long white hairs; leaves mostly palmately divided into 5 to 7 leaflets; leaflets 1¾ to 3 in. long, narrow, margins deeply and narrowly toothed, under surface densely white silky-hairy; upper surface green with some hairs; leaflets of uppermost leaves subtending flower stems, reduced in number, basal leaves long-petioled; flowers golden yellow, saucer-shaped, 1 in. in diameter, in leafy-bracted somewhat dense cymes; peduncle, pedicel, and calyx, silky-hairy; stamens and akenes many.

Potentilla gracilis. Five-finger.

Geum L.

Perennial herbs with pinnate leaves, the terminal lobe much larger than the several lateral lobes. Flowers in corymbs or solitary. Calyx 5-lobed, alternating generally with bractlets. Petals 5. Stamens numerous. Pistils many on an enlarged receptacle, becoming akenes, the styles persistent.

Geum macrophyllum. Large avens.

Geum macrophyllum Willd. **Large avens.** Stems stout, 1 to 3½ ft. tall, stiff-hairy; basal leaves 5 to 20 in. long, with a very large somewhat round heart-shaped toothed terminal leaflet, the lateral leaflets more or less triangular in outline, toothed and sometimes lobed with very small ones interspersed, stiff-hairy; cymes few-flowered, pedicels long, flowers deep yellow; bractlets or calyx small or absent; receptacle elon-

gated; akenes forming a dense ball, each tawny-hairy on upper side, bearing a hooked and jointed style.

Waste land.

Rosa L.

Spiny or prickly shrubs with pinnately compound leaves. Stipules united with the leaf base and persistent. Flowers showy, solitary or in panicles or corymbs. Receptacles and calyx-tube globose or urn-shaped, enclosing the pistils and becoming fleshy. Petals generally 5, broad, borne with the numerous stamens on the calyx-tube. Pistils several to many, separate and distinct, enclosed in the receptacle but not united with it. Fruit consiting of the colored fleshy receptacle enclosing several hairy hard akenes.

Rosa durandii Crepin. Shrub 6 to 9 ft. tall, armed with long, stout, flat, curved spines; branches densely hairy and glandular; petioles hairy and glandular; leaflets 5 to 9, broadly oval, smooth above, densely glandular beneath; flowers borne singly or 2 or 3 together; fruits globose, ½ to ¾ in. broad.

Found associated with other species in Northwestern Oregon.

Rosa nutkana.
Common wild rose.

Rosa nutkana Presl. **Common wild rose.** Stout erect shrub, 2 to 5 ft. tall, with broad-based stiff straight spines; leaflets usually 5 or 7, ovate or elliptic, coarsely glandular-toothed with glandular hairs beneath or these confined to the rachis; flower 2 to 3 in. in diameter; calyx lobes often leaf-like at tips; petals broad, deep pink with a very slight magenta tinge; fruits globose or flattened, ½ to ¾ in. broad, without a neck, calyx-lobes remaining attached.

Our largest and most widely distributed wild rose.

Rosa myriadenia Greene. Low shrub with spreading branches, armed with paired, curved spines at base of leaves; petioles densely glandular; leaflets 5, oval, with small gland-tipped teeth, dark and smooth above, paler and hairy beneath, with glands on the veins; flowers borne singly or 2 or 3 together; fruits globose with short neck.

Found sparingly associated with other species in Northwestern Oregon.

Rosa pisocarpa Gray. Slender erect shrub, growing 3 to 6 ft. tall, bearing few slender straight spines; leaves deep green above, paler beneath, with minute hairs; flowers 1 to 1¾ in. in diameter, generally several in a corymb; calyx-lobes elongated, smooth or glandular; petals broad, deep pink with slight magenta tinge; fruits globose or slightly elongated, ¼ to ½ in. broad, with short neck, the calyx-lobes remaining attached.

Found associated with **R. nutkana** in the valleys, or alone at altitudes higher than generally inhabited by the latter.

Rosa eastwoodiae Rydb. Slender shrub armed with slender straight spines; leaflets mostly 5, smooth above, finely hairy beneath; flowers several in a corymb; fruits ellipsoid with distinct neck, ½ in. long.

Found sparingly associated with other species in Northwestern Oregon.

Rosa pringlei Rydb. Slender shrub 3 ft. or more tall, without spines, or with a few small straight prickles at base of leaves; petioles densely and minutely hairy, not glandular; leaflets 5 or 7, finely hairy, velvety beneath; flowers 2 to 5 in a corymb; fruits ellipsoid, with distinct neck, ½ in. or more long.

Found associated with **R. nutkana** and other species in Northwestern Oregon.

Rosa rubiginosa L. **Sweetbrier.** Stems slender, trailing, bearing stout recurved spines; leaflets 5 to 7, pale green, ovate or elliptic to nearly round, coarsely toothed, densely glandular beneath, very sweet-scented; flowers 1½ to 2 in. in diameter; calyx-lobes glandular; petals light clear pink with white bases; fruits long, urn-shaped, contracted into a neck, the calyx-lobes finally falling away.

Introduced from Europe; now very abundant in Western Oregon.

Rosa gymnocarpa Nutt. **Wood rose.** Slender-stemmed shrub 1 to 4 ft. tall, generally densely covered with numerous needle-like prickles; leaves divided into 5 to 9 small leaflets, these round-ovate to elliptic, ¼ to 1 in. long, with gland-tipped teeth; flowers ¾ to 1¼ in. in diameter, petals a clear delicate pink, with white bases; calyx-lobes sometimes with leafy tips, deciduous in fruit; fruits generally pear-shaped, rarely globose, red, ⅓ to ⅝ in. long.

Woods or north hill-slopes with other shrubbery. This is our smallest and daintiest wild rose.

Rosa gymnocarpa.
Wood rose.

Sanguisorba L.

Herbs with pinnate leaves and minute flowers in a dense head or spike. Calyx 4-lobed, the lobes deciduous. Petals absent. Stamens 2 to many. Pistil 1, style hair-like. Akene enclosed in the 4-angled, dry, nearly closed calyx-tube.

Sanguisorba annua Nutt. **Burnet.** Stems branching, erect, 1 to 2 ft. tall; leaflets cut into narrow lobes, ¼ to 1 in. long; spike greenish, oblong, ⅓ to 1 in. long; flowers with both stamens and pistils; stamens 2 or 4.

Common.

Sanguisorba annua.
Burnet.

Alchemilla L.

A minute annual (ours) ,with palmately-lobed leaves and sheathing stipules. Flowers very small, clustered in the leaf axils, calyx 4- or 5-lobed, alternating with minute bractlets, or these absent. Petals absent. Stamens 1 to 4. Pistils 1 to 4. Akene enclosed by the calyx tube.

Alchemilla arvensis.

Alchemilla arvensis (L.) Scop. One-half to 3 in. tall, minutely hairy; leaves widest near apex, deeply 3-lobed, the lobes toothed; flowers borne at nearly every node.

Common on hillsides and in fields, but so small as to be very inconspicuous.

Osmaronia Greene

Shrubs. Leaves simple, entire, with deciduous stipules. Stamens and pistils on separate plants. Flowers white or greenish, in nodding racemes. Staminate blossoms more spreading and whiter than pistillate; stamens 15, in 3 rows; aborted pistils often present. Pistillate flowers bearing

aborted stamens. Pistils 5, separate, borne at the base of the calyx tube, often only 1 or 2 developing. Fruit of 1 to 5 drupes, 1-seeded, with a hard stone.

Osmaronia cerasiformis (T. and G.) Greene. **Indian peach. Oso berry.** Shrub 3 to 10 ft. tall; leaves thin, smooth, broadly oblong, obtuse or acute at apex, mucronate, acute at base, 1½ to 3½ in. long; petals ¼ in. long, narrowed at base; drupes becoming peach-colored, changing to deep blue-black.

Roadsides, common.

The flowers are fragrant, and the broken stems have a characteristic pungent odor. This is generally our earliest shrub to blossom and develop foliage in spring. The pistillate plants are often in full flower before the leaves appear.

Osmaronia cerasiformis. Indian peach.

Prunus emarginata var. *erecta.* Wild cherry.

Prunus L.

Shrubs or small trees with simple leaves. Flowers white, solitary, or in racemes or corymbs. Calyx 5-toothed, deciduous. Petals 5. Stamens 15 or more, generally in some multiple of 5. Pistil 1, with 2 pendulous ovules. Fruit a drupe, generally 1-seeded.

Prunus emarginata (Dougl.) Walp. var. **erecta** Piper. **Wild cherry.** Small tree, 20 to 60 ft. tall; branches and trunk reddish brown to red, smooth, with conspicuous lenticels on twigs; leaves ovate or elliptic, generally obtuse, smooth or minutely hairy beneath, finely toothed on margins, 1 to 4 in. long, generally with 1 or 2 glands on base of blade just above junction with petiole; flowers in small corymbs; fruits bright red, ⅓ to ½ in. long, very bitter.

Margins of woods, or forming thickets along streams.

Prunus demissa. Western choke-cherry.

Prunus demissa (Nutt.) Dietr. **Western choke-cherry.** Shrub or small tree 6 to 25 ft. tall; leaves long-obovate, acute or short

acuminate at apex, obtuse or subcordate at base, finely toothed on margins, 2 to 4 in. long, 1 or 2 glands commonly found on petiole just below junction with blade; flowers in long slender racemes; fruit dark red or purplish black, puckery.

Common.

Pyrus L.

Trees or shrubs with simple deciduous leaves, and deciduous stipules. Flowers white or pink, in corymbs. Stamens mostly 20. Ovary inferior, 2- to 5-celled, ovules 2 in each cell. Styles as many as the cells, united at base. Fruit a pome.

Fruits of *Pyrus rivularis.* Wild crab-apple.

Pyrus rivularis Dougl. **Wild crab-apple.** Small tree or shrub, 10 to 30 ft. tall; leaves long-ovate, pointed at apex, rounded at base, coarsely toothed or sometimes irregularly 2- or 3-lobed, green above, paler beneath with hairs, becoming reddish brown, 1¼ to 4 in. long; flowers 5 to 10 in a corymb, white; fruits oblong, ½ to (rarely) 1 in. long, yellowish with rosy tinting, becoming nearly black.

Rather common.

The leaves of this tree turn a vivid scarlet in autumn.

Crataegus L.

Shrubs or trees bearing thorns. Leaves deciduous, simple, lobed or toothed. Flowers in corymbs, white (in ours). Calyx-tube cup-shaped, roundish petals borne upon it. Ovary inferior or nearly so, 2- to 5-celled; styles equal in number. Fruit a small pome.

Crataegus douglasii Lindl. **Western hawthorn. Western black haw.** Shrubs or small tree reaching 30 ft. in height, bearing sparingly stout thorns ½ to 1 in. long; young twigs reddish, this color concealed in somewhat older twigs by a thin silvery bark; leaves mostly obovate, finely serrate to the middle, coarsely double serrate or lobed above the middle, narrowing at base to the petiole, sparsely hairy or smooth; flowers ½ in. or less broad; fruit black.

Common.

Amelanchier Medic.

Shrubs or trees with simple deciduous leaves. Flowers in racemes, white. Calyx united with the ovary, 5-lobed, the lobes

narrow. Petals more or less erect. Stamens many. Ovary inferior or partly so, 5-celled, the cells again divided by secondary partitions. Style-branches 5. Fruit fleshy, globose.

Amelanchier alnifolia Nutt. **Service berry.** Shrub 4 to 12 ft. tall; leaves round or oblong, coarsely toothed above the middle, obtuse at apex, penerally obtuse at base, sparsely hairy above, paler beneath and sometimes densely hairy; racemes short; petals long and narrow; calyx densely covered with short white hairs below the lobes; fruit purplish to black, ¼ in. in diameter.

Common.

Amelanchier alnifolia. Service berry.

LEGUMINOSAE. Pea Family

Herbs, shrubs, or trees, with alternate mostly compound leaves, generally with stipules. Sepals partly united, calyx sometimes 2-lipped, generally 5-toothed. Petals generally 5, separate, or certain petals sometimes partly adherent, regular or irregular (in ours always irregular, with 1 banner, 2 wings, and a keel of 2 petals). Stamens generally 10, separate, or more commonly united into a sheath about the pistil, or the upper stamen free. Pistil simple, 1-celled, with 1 row of seeds, the pod generally opening by splitting on both sides (rarely not splitting).

Thermopsis R. Br.

Perennial plants somewhat resembling lupines. Stems generally erect, branching. Leaves palmately divided into 3 leaflets. Flowers yellow, borne in a raceme, each flower subtended by a permanent bract. Calyx somewhat bell-shaped, 5-toothed, the 2 upper teeth nearly united. Banner broad, shorter than the wings. Stamens 10, separate.

Thermopsis gracilis Howell. **Yellow lupine.** Perennial herb 2 to 3 ft. tall; leaves mostly long-petioled with large leaf-like stipules; leaflets 1½ to 3½ in. long, generally broadest above middle, smooth above, hairy beneath; flowers 1 in. long, showy in a terminal raceme, yellow; calyx hairy; stamens all separate; pod hairy.

Open woods and burnt-over land, somewhat locally distributed.

Lupinus L.

Herbs or shrubs with palmately compound leaves. Leaflets generally 3 to 15 or more (rarely only 1). Flowers in racemes. Calyx 2-lipped, the lips entire or toothed. Lateral bractlets sometimes present. Banner petal generally grooved through center, with sides turned backward. Stamens 10, united in a sheath, the anthers alternately short and elongated. Pod flattened, with 2 to 10 or 12 seeds.

Lupinus nanus Dougl. var. **carnosulus** C. P. S. **Showy lupine.** Stems 1 to several from base, erect or slightly decumbent, ½ to 1½ ft. tall ,more or less hairy; leaflets 5 to 7, mostly broadly obovate, mucronate, more or less hairy, ¾ to 1½ in. long; flowers in several whorls on peduncles, ½ in. long, deep blue, on pedicels ⅛ in. or less long; base of banner white or pellow, changing to lavender; pods hairy, broad, sometimes reaching 2 in. in length, with 4 to 12 variously mottled seeds.

Limited in distribution, but sometimes occurring in large patches. Very showy.

Lupinus micranthus Dougl. **Small lupine.** Annual; stems branching from the base, erect, 6 to 12 in. tall, covered with both short appressed and long spreading hairs; leaflets 5 to 8, oblanceolate to linear, smooth or hairy; flowers in 2 to 7 whorls on peduncle, on short pedicels; calyx lips broad, grayish-hairy; banner petal ⅛ in. long or somewhat more, blue and white, the center turning violet, the sides scarcely turned backward; pods 1 to 1½ in. long, hairy, with 6 or 7 gray- or brown-mottled seeds.

Our most common lupine, found abundantly on hillsides, fields, roadsides, and waste land everywhere.

Lupinus albifrons Benth. . **Silver-leaved lupine.** Stem erect, branching above, often woody below, 1½ to 3 ft. tall, covered with appressed silky hairs; leaves long-petioled; leaflets 7 to 10, broadly or narrowly obovate, acute or obtuse at apex, silvery-silky on both sides, or when young golden brown-silky; racemes 3 to 12 in. long, the peduncle, pedicels, and calyx densely silky; petals blue or purple, the banner petal more or less hairy on the back, the white or yellow center changing to violet; pods yellowish, 1¼ to 2 in. long, with 5 to 9 variously mottled seeds.

Generally dry soil. Not common.

Lupinus polyphyllus Lindl. **Large lupine.** Stem stout, erect, branching, 1 to 3½ ft. tall, covered with minute hairs; leaflets 10 to

17, 3 to 6 in. long ,elliptic, dark green above, lighter beneath, covered with appressed hairs; racemes ½ to 2 ft. long; flowers ½ to ¾ in. long, somewhat whorled; peduncle, pedicels, and calyx sparsely hairy; petals dirty-white to lavender or bluish, becoming brown with age; pods sparsely hairy, dark, with 5 to 9 variously marked seeds.

Very common in dry or sometimes moist ground. A large and conspicuous but unattractive plant after the flowers begin to turn brown.

Lupinus albicaulis Dougl. **Silver-stemmed lupine.** Stem 1 from base, erect, branched above, 1 to 2 ft. tall, covered thinly with short appressed silvery hairs; leaflets 5 to 9, narrow, with short appressed silvery hairs sparsely covering both sides; flowers ½ in. long, scarcely whorled, forming an inflorescence 2 to 5 in. long, not crowded; pedicels, peduncle and calyx silvery short-hairy; petals, narrow, dirty-white to purplish, turning brown; pods 1¼ to 1½ in. long, silvery-hairy; seeds 5 or 6, gray-mottled.

Rather dry soil. Not common.

Cytisus L.

Shrubs. Leaves divided into 3 leaflets. Flowers generally yellow. Stamens united into 1 set.

Cytisus scoparius Link. **Scotch broom.** Shrub 1½ to 6 ft. tall, generally with few small leaves; stems angled; leaflets 3, ⅛ to ½ in. long, obovate or oblanceolate, more or less hairy; flowers showy, deep yellow, in the leaf axils; pods long-hairy on margins.

Cytisus scoparius. Scotch broom.

Medicago L.

Herbs with compound leaves of 3 leaflets. Flowers yellow, blue, or purple, in short spikes or heads. Nine stamens united into a sheath, the upper stamen free. Pod small, 1- to several-seeded, curved or coiled, not splitting.

Medicago sativa L. **Alfalfa.** Perennial below ground, erect and often bushy, smooth, dark green; leaflets obovate, those of the upper leaves generally very narrow, the lower broader, ⅜ to 1 in. long, finely toothed near the apex; flowers blue to purple in racemes; pods spirally twisted 2 or 3 times.

A forage plant, escaped from cultivation. Found occasionally along roadsides.

Medicago hispida Gaertn. **Bur clover.** Plants weak, spreading, 4 in. to 2 ft. long, nearly smooth; leaflets obovate or sometimes somewhat heart-shaped at apex, minutely toothed; stipules with very slender teeth; flowers small, yellow, in loose head; pod several times spirally twisted, flattened, wrinkled, the thickened margin bordered by a double row of hooked prickles.

Rather common.

Medicago lupulina L. **Black medick.** Stems weak, spreading ¾ to 1½ ft. long; leaflets obovate, finely toothed, obtuse or slightly heart-shaped at apex; flowers very small, deep yellow, in short dense spikes; pod small, kidney-shaped, 1-seeded, without prickles, black at maturity.

Rather common.

Trifolium L.

Herbs with compound leaves of 3 leaflets (in a few species, more than 3). Stipules united at base and with the base of the petiole. Flowers in heads or very short spikes. Calyx 5-toothed, the teeth nearly equal. Nine stamens united into a sheath, the 10th free. Pod 1- to several-seeded remaining within the persistent calyx.

Trifolium tridentatum Lindl. **Three-toothed clover.** Stems weak, more or less ascending, several from the base, 4 to 24 in. long; stipules conspicuously veined, slender-toothed; leaflets long, narrow, mostly minutely toothed, mucronate; heads on long terminal and axillary peduncles, ¾ to 1½ in. broad; head subtended by a circular involucre mostly deeply cut into slender teeth; calyx lobes usually 3-toothed; corolla purple, banner sometimes white-tipped.

Common in fields and on hillsides.

Trifolium involucratum Ort. **Marsh clover.** Stems generally weak, spreading, sometimes tall, ⅓ to 2 ft. long, leaflets mostly obovate or oblanceolate, sometimes ovate or lanceolate, minutely and sharply toothed, obtuse or acute at apex, mucronate, smooth and bright green; heads large, purple, red or pink, lighter or white at corolla tips, subtended by a large saucer-shaped involucre, with sometimes secondary involucres above; involucre lobed, the lobes generally toothed; pod several seeded.

Common along streams, or at margins of fresh or salt marshes.

Several varieties of this species, differing principally in leaflet or involucre characters, occur.

Trifolium microdon H. and A. **Cup clover.** Stems several, mostly erect, or slightly decumbent, ¼ to 2 ft. tall, branches slender; leaflets small, heart-shaped at apex, mostly broad, sparsely hairy at least beneath, minutely toothed; heads small; involucre deeply cup-shaped, at least half enclosing the head, becoming flattened in fruit, sparsely hairy or smooth, lobed, the lobes toothed; flowers small, white or pale pink; pods 1-seeded.

Hillsides and fields, common.

Trifolium microcephalum Pursh. **Small-headed clover.** Stems erect, ¼ to 2 ft. tall; leaflets soft-hairy or nearly smooth, narrowly heart-shaped at apex, mucronate, minutely toothed at widest part, margin entire at base; heads small; involucre nearly flat, broad, not enclosing head, webby with long hairs, lobed, the lobes tapering to long points, rarely toothed; flowers small, white or pale pink; pods 1 or 2 seeded.

Hillsides and fields.

Trifolium dubium Sibth. **Small hop-clover.** Stems slender, 1 to many from base, erect or somewhat decumbent; leaflets rather narrowly obovate, obtuse, sometimes notched at apex, minutely toothed, more or less hairy on lower side of mid-rib, ⅜ to ½ in. long; heads slightly elongated, ¼ in. broad or less; flowers minute, yellow, in age turned backward, the banner petal narrow; pod 1-seeded.

Very common.

Trifolium procumbens L. **Hop-clover.** Stems generally several, decumbent or erect, with slender hairs; leaflets mostly broadly obovate, obtuse, mostly notched, more or less hairy on lower side of mid-rib, ¼ to ¾ in. long; heads globose or slightly elongated, mostly ⅜ in. or more long; flowers bright yellow, in age turned backward, the banner petal very broad.

Rare.

Trifolium hybridum L. **Alsike.** Stems several, erect, ½ to 1 ft. tall, more or less hairy; leaflets ovate, obovate or nearly round, obtuse at apex, ¾ to 1 in. or more long, somewhat hairy; heads ¾ to 1 in. or more broad, the flowers turning backward after maturity; involucre none; corolla pink; stems bearing flower-heads somewhat longer than the leaves.

Common. Very fragrant.

Trifolium repens L. **White clover.** Stems several from the base, creeping, smooth; leaves long-petioled; leaflets mostly broadly heart-shaped at apex, smooth, minutely toothed, ½ to ¾ in. long; heads mostly globose, ¾ to 1 in. or more broad, the flowers all turning backward after maturity; involucre none; corolla white, becoming brownish with age; stems bearing flower heads much longer than the leaves.

Common. Fragrant.

Trifolium albopurpureum T. and A. **Rancheria clover.** Stems several, erect or slightly decumbent, ½ to 1½ ft. tall; heads generally somewhat elongated, spike-like, ½ to ¾ in. long; leaflets narrowly or somewhat broadly obovate, notched at apex, sparsely covered with closely appressed hairs, bluntly toothed; involucre absent; corolla dark purple; pod 1- or 2-seeded.

Fields and hillsides.

Trifolium pratense L. **Red clover.** Stems several from the base, mostly erect, ½ to 2 ft. tall, more or less hairy; lower leaves somewhat long-petioled, the petioles decreasing in length upward, absent from the leaves immediately beneath the head; leaflets broadly (or the upper narrowly) ovate or elliptic, minutely toothed or margin entire, deep green with generally a whitish crescent near center; stipules thin, conspicuously veined, the veins sometimes dark red or brown; heads generally slightly elongated, ¾ to 1 in. high, deep magenta pink or red; involucre none; pod 2-seeded.

Common.

Trifolium eriocephalum.
Woolly clover.

Trifolium incarnatum L. **Crimson clover.** Stems 1 or several from base, erect, soft-hairy, especially above; leaflets broadly obovate, obtuse, sometimes notched at apex, minutely toothed to nearly entire, somewhat hairy, ½ to 1 in. long; heads ½ to 3 in. long, spike-like; involucre none; calyx densely tawny-hairy, the lobes sharp and stiff; corolla deep crimson, showy.

An escape from fields, sparingly naturalized. Showy.

Trifolium eriocephalum Nutt. **Woolly clover.** Stems erect or slightly decumbent, ½ to 1 ft. tall, more or less hairy; leaflets nar-

rowly elliptic or ovate, ½ to 1½ in. long, minutely toothed, mucronate, generally long-hairy, the veins close and conspicuous; stipules long, mostly entire, united with petiole for at least half their length, sometimes very hairy; heads dense, often somewhat elongated, woolly from long hairs on calyx lobes; flowers soon turning backward; involucre none; calyx lobes very narrow, plume-like; corolla pale yellow to dirty white; ovary hairy; pods 2- to 4-seeded.

Fields and hillsides, rather common.

Lotus L.

Herbs or sometimes woody at base. Leaves pinnately compound, alternate. Flowers in umbels or solitary, generally with leafy bracts. Wing petals with pockets enclosing projecting lobes of keel. Nine stamens united, 1 free. Pods 1- to many-seeded.

Lotus denticulatus (Drew) Greene. Stems generally several from base, erect, ⅜ to 2 ft. tall, smooth or with few hairs; leaflets mostly ovate, acute at apex, ½ to ¾ in. long, clothed with white hairs, especially on the lower side; calyx hairy; corolla red and yellow; flowers mostly solitary in the leaf-axils, sessile or nearly so, without bracts; pods oblong, straight, ½ to ¾ in. long, ⅛ to 3/16 in. broad, sparsely hairy, not constricted between seeds.

Lotus micranthus Benth. **Slender trefoil.** Stems generally several from the base, much branched, wiry, and often reddish; leaflets 3 to 5, rounded, elliptic or obovate, obtuse, ¼ (or less) to ½ in. long, shining or somewhat hairy; flowers subtended by a leafy bract, mostly solitary on somewhat elongated peduncles in the leaf axils; corolla pink or red and yellow; pods very slender, shining, 1 in. or less long, 1/16 in. broad, 4- to 9-seeded, constricted between seeds.

Very common.

Lotus micranthus. Slender trefoil.

Lotus pinnatus Hook. **Butter and eggs.** Stems decumbent or erect, 1 to 1½ ft. long, smooth; leaflets 5 to 9, mostly obovate, obtuse at apex, thickish, smooth; flowers in umbels on long peduncles, mostly not bracted; banner petal deep yellow, wings white; calyx brownish or purplish, very dark at base; pods dark brown or purplish, very slender, 1½ to 2 in. long, many-seeded, not constricted between seeds.

Found in marshy places or along the margins of sluggish streams. A showy plant.

Lotus gracilis Benth. Resembling **L. pinnatus,** but wing petals lavender.

In bogs or sandy marshes, particularly along the sea coast.

Lotus crassifolius (Benth.) Greene. **Pink trefoil.** Stems erect, somewhat branching, 1 to several ft. tall; leaflets ovate, obovate or elliptic, obtuse, mucronate, somewhat shining, sparsely hairy; umbels 1-sided; petals red- or purplish-veined; pods reddish brown, 1½ to 2½ in. long, few- to many-seeded, slightly curved upward, not constricted between seeds.

Lotus crassifolius. Pink trefoil.

Found along margins of woods.

Psoralea L.

Perennial herbs (ours). Leaves divided into 3 or 5 leaflets, these appearing full of pinpricks, due to embedded translucent glands. Flowers in racemes or spikes. Calyx 5-lobed. Keel attached to wings. Stamens in 1 or 2 groups. Pod 1-seeded, not splitting at maturity.

Psoralea physodes Dougl. **California tea.** Stems arising from rootstocks, erect, 1 to 2 ft. tall, smooth or slightly hairy; leaflets 3, round or ovate, latter generally pointed at apex, nearly smooth; flower stalks slender, borne in the leaf axils, bearing dense racemes at apex; bracts small; calyx at first narrow, becoming inflated as pod matures, dotted with embedded glands, and bearing conspicuous dark hairs; corolla whitish or greenish, the keel sometimes tipped with purple; pod roundish, flattened.

Vicia L.

Herbs, annual or perennial, with weak, angled, sometimes climbing stems. Leaves pinnately compound, ending in tendrils. Flowers in 1-sided axillary racemes, or solitary in the leaf axils. Calyx 5-toothed. Sides of the banner petal generally turned backward. Wings united to keel at its middle. Nine stamens united, 1 free. Style thread-like, bearing a tuft of hairs near the apex. Pod flattened, 2- to several-seeded. Seeds globose.

Vicia sativa L. **Cultivated vetch. Tare.** Stems slender or somewhat stout, 1½ to 3 ft. tall, clinging by their tendrils to each other or to other neighboring plants for support; leaflets 6 to 12, smooth or sometimes hairy on the margins and under surface, narrowly or broadly obovate, notched or square-cut at apex, mucronate, ½ to 1 in. long; flowers single or in twos in the leaf axils, on very short pedicels; calyx-teeth hairy on the margin; corolla ⅔ to 1 in. long, banner purple and wings reddish; pods 1½ to 2 in. long.

Found occasionally as an escape from fields.

Vicia americana Muhl. **American vetch.** Stems trailing or climbing, 1 to 3 ft. long, strongly 4-angled, sometimes winged at the angles, smooth or somewhat hairy; leaflets typically broadly oblong or long-ovate, or obovate, smooth or sparsely hairy, obtuse or square-cut at apex, mucronate, ½ to 1½ in. long; peduncles 3- to 8-flowered, shorter than the leaves; corolla purple or lavender at first, changing to blue, ¾ in. long; lower calyx teeth longer than upper; pods 1½ to 2 in. long, dark-colored; seeds black.

Vicia americana. American vetch.

Common. Rather unstable variations of the leaf characters occur, and varieties are established upon these points. Var. **linearis** Wats. has linear leaflets, while in var. **truncata** Brew. the leaflets are several-toothed at the apex.

Vicia gigantea Hook. **Giant vetch.** Stems stout, climbing, 2 to 4 ft. tall, somewhat hairy; leaflets narrow, oblong or long-ovate, obtuse at apex, mucronate; corolla reddish-purple or yellow (generally yellow), ½ in. or longer; pod dark, oblong, abruptly narrowing to a long tapering point, smooth, 3- or 4-seeded, the seeds black.

Along streams.

Vicia villosa Roth. **Hairy vetch.** Stems slender, climbing, 3 to 4 or 5 ft. long, somewhat hairy; leaflets 10 to 20, narrowly oblong, long-hairy, mucronate; flowers in dense 1-sided long-peduncled racemes; calyx purplish, lower teeth much longer than upper, sparsely hairy; corolla ¾ in. long or slightly less, banner dark blue or dark purple, wings somewhat lighter.

A European plant rather widely naturalized.

Lathyrus L.

Herbs with flowers in 1-sided racemes. Differs from Vicia in the generally broader banner, generally larger leaflets, in the occasional absence of tendrils, and in the flattened style which is hairy only on the upper side.

Lathyrus sulphureus Brew. **Yellow pea.** Stems 1 to 3 ft. tall, rather stout, smooth; leaves smooth, ending in tendrils; leaflets broadly ovate to elliptic, obtuse and mucronate at apex. Three-

fourths to 2 in. long, paired or alternate or irregularly placed on rachis, generally all three arrangements on same plant; racemes 5- or 6- to many-flowered, the flowers turned more or less downward from the apex of the pedicel; corolla yellowish white, turning deep yellowish-brown, ½ to ¾ in. long.

Common in the margins of woods.

OXALIDACEAE. Oxalis Family

Small plants with acid juice. Leaves palmately compound, with 3 leaflets. Ovary 5-celled, superior, bearing 5 styles. Fruit a capsule.

Oxalis L.

Flower stems borne in the leaf axils; flowers 1 to several on a stem. Stamens 10, with filaments widened at base, and slightly united. Capsule 5-celled, with 1 to several seeds in each cell.

Oxalis oregana. Wood sorrel.

Oxalis oregana Nutt. **Wood sorrel.** Leaves and flower-stems arising 4 to 6 in. high from a creeping rootstock; petioles more or less hairy, green or reddish, succulent, jointed to dilated base, breaking away at joint and leaving old bases on rootstock; leaflets ½ to 1 in. long; flowers white or pinkish, solitary on the peduncle, ¾ to 1 in. long, the corolla sometimes veined with lavender; capsule slender.

Common in moist open woods.

Oxalis trilliifolia. Many-flowered wood sorrel.

Oxalis trilliifolia Hook. **Many-flowered wood sorrel.** Leaves and flower stems 4 to 10 in. tall, from a creeping rootstock; petioles with few hairs; flowers

white or cream-colored, 3 to 6 on a peduncle, ¼ to ½ in. long; capsules slender.

Mountain woods, also associated with **O. oregana** near coast.

Oxalis suksdorfii Trelease. **Yellow sorrel.** Clustered stems erect, 3 to 10 in. tall from slender running rootstocks, somewhat hairy; leaves with 3 broad leaflets ½ to 1 in. long, deeply notched at apex, sparsely hairy; petioles hairy, jointed at base; umbels few-flowered, in the leaf axils; petals yellow, obtuse; capsules short-cylindrical, on jointed pedicels which turn backward in fruit, curving upward at summit to bring capsules erect.

Oxalis suksdorfii.
Yellow sorrel.

Rather common in edges of cultivated fields and in waste land.

GERANIACEAE. Geranium Family

Herbs (ours) with lobed or divided leaves and regular, symmetrical flowers. Stipules present, membranous. Ovary superior, 5-lobed, the styles united almost to the tips around an extension of the receptacle, these with the lobes separating (beginning at the base) at maturity into separate, single-seeded, long-beaked dry fruits. The beaks coil and uncoil with changes in the humidity of the air, probably assisting in planting the seed-case in the ground.

Geranium L.

Herbs with swollen joints and palmately parted opposite or alternate leaves, often unequal. Stipules present, membranous. Flowers solitary, or in small generally long-stalked umbels in the leaf-axils. Stamens 10, sometimes lightly united at base, all anther-bearing, alternately long and short, the longer with basal glands inside the filament. Pistil 5-lobed, with the 5 styles united nearly to the tip until maturity, when the carpels split apart and away from the central elongated axis of the receptacle, each long-beaked by the persistent twisted or coiled style.

Geranium carolinianum L. **Carolina geranium.** Stems branching, spreading-ascending, sparsely or densely covered with white downward-turning hairs; leaves somewhat triangular in outline, 5- to 7-parted, the segments irregularly lobed, the lobes mucronate, more or less hairy, the hairs of the petiole turning downward; flowers pink, about ¼ in. long, the sepals white-hairy on veins, abruptly narrowed at apex to slender point; ovary lobes covered with long and short hairs, not wrinkled; beaks hairy, with or without glands; seed-surface pitted.

Common.

Geranium dissectum L. **Cut-leaved geranium.** Resembling **G. carolinianum,** but primary leaf segments generally more lobed, the lobes narrower; flowers magenta; ovary lobes both hairy and transversely wrinkled, the seed-surface pitted.

Geranium molle L. **Dove's foot geranium.** Somewhat similar to the preceding species but having a sprawly appearance, the stems generally more slender, often longer, weaker, sometimes almost trailing, often strongly angular at the joints, pedicels widely spreading in fruit, and peduncles, also, often turned backward; leaves hairy, round in outline, 5- to 7-lobed, the lobes again cut into somewhat narrow lobes, or those nearest summit of plant sometimes star-shaped, with 5 narrow uncut lobes; flowers pink to purple; ovary lobes transversely wrinkled, not hairy; seed-surface smooth.

Geranium incisum.
Large geranium.

Common.

Geranium pusillum L. **Small-flowered geranium.** Similar to **G. molle,** but less hairy, stems more strongly erect; ovary lobes keeled and hairy, not wrinkled; seed-surface smooth.

Common.

Geranium incisum Nutt. **Large geranium.** Similar in many characters to Geranium species described previously, but much larger in all respects; plant 1½ to 2½ ft. tall, hairy, often glandular, branching, bushy, stems stout; leaves 5- to 7-parted, the segments deeply lobed, scarcely mucronate; flowers 1¼ to nearly 2 in. in diameter; ovary lobes hairy, sometimes glandular, not wrinkled; seeds smooth.

Common.

Erodium L'Her

Annuals with opposite, often unequal, simple or pinnately compound leaves. Anther-bearing stamens 5, alternating with 5-scale-like sterile filaments. Pistil and fruits like those of **Geranium**.

Erodium cicutarium L'Her. **Filaree.** In early spring or on hard ground, plants consist of a mostly flat rosette of leaves with short flowering stems; later or under more favorable growth conditions plants become large and spreading, with long leaves and flower stems more or less erect; leaves pinnately compound, the leaflets pinnately lobed, these again often toothed, more or less hairy, 4 to 12 in. long; flowers small, magenta; sepals hairy, often with a longer stiffer hair at apex.

Very common. Small along gravelled railroad beds. Large and sturdy in gardens.

Erodium cicutarium. Filaree.

ANACARDIACEAE. Sumac Family

Trees or shrubs with alternate leaves. Flowers small, all containing stamens and pistils or some with either organ missing. Sepals partly united about a disk. Petals generally 5. Stamens 5 or 10. Ovary superior, 1-celled, 1-ovuled. Styles 3. Fruit drupe-like, dry.

Rhus L.

Shrubs or small trees, with simple or compound leaves. Flowers with both stamens and pistils, or some with stamens or pistils only. Stamens 5.

Rhus diversiloba T. and G. **Poison oak.** Erect shrub, 3 to 10 ft. tall, sometimes becoming tree-like, or vine-like and climbing tall trees; leaves divided into 3 leaflets; leaflets ovate, roundish, or elliptical, coarsely toothed; petioles and young twigs covered with a rusty down; panicles bearing very small greenish flowers borne in the leaf-axils; fruits whitish, corrugated, remaining on the shrub in dense clusters after the leaves have fallen.

Abundant in most of Oregon. Absent, or nearly so, on the immediate coast and at high altitudes in the mountains.

One of our most attractive and most widely distributed shrubs, but containing a highly poisonous non-volatile oil. Quantities of the fruits are sometimes found, in winter, in the holes of small rodents, indicating that they are put to some use. From the flowers bees make honey which is not poisonous.

ACERACEAE. Maple Family

Trees or shrubs with deciduous opposite leaves. Flowers with both stamens and pistils, or some with stamens and others with pistils, borne in racemes or corymbs. Calyx generally 5-cleft, the petals of the same number and alternate with them when present. Stamens various in number, borne on a disk below the pistil when latter is present. Ovary superior, 2-celled with 2 styles or style branches, developing into a 2-winged dry fruit called a samara, the wings facilitating transportation by the wind.

Acer L.

Leaves simple, generally palmately lobed, or pinnately compound. Flowers drooping in racemes or umbels.

Acer macrophyllum. Large-leaved maple.

Acer macrophyllum Pursh. **Large-leaved maple.** Round-topped tree reaching 90 ft. or more in height; leaves as broad as long, 5 to 12 in. in diameter, palmately 5-lobed to near or below the middle, the lobes further cut irregularly on the margins; flowers in long racemes mostly from the mixed terminal bud, greenish or yellowish staminate and perfect flowers appearing together; stamens generally 10, filaments densely white-woolly; wings of fruits 1½ to 2 in. or more long; ovary densely bristly with short stiff hairs; mature fruit dark brown.

This is one of our most gorgeously colored trees in the autumn, the foliage turning a deep gold.

Common.

Acer circinatum Pursh. **Vine maple.** Small tree or straggling shrub; leaves as broad as long, 2 to 4 in. in diameter cut into 7

(rarely 5) sharp lobes less than half of distance to base, the lobes toothed on margins; flowers 3 to 10 or 12 in a corymb, perfect or staminate, long pedicelled, deep red; stamens 6 to 10, filaments covered with hairs near base; wings of the fruit forming a straight or nearly straight line at right angles to the stalk; whole fruit deep red at maturity.

One of our few scarlet-foliaged trees in the autumn. A very beautiful species.

Found along streams, becoming more common with ascending altitude.

Acer circinatum.
Vine maple.

RHAMNACEAE. Buckthorn Family

Shrubs or small trees. Leaves simple. Flowers very small in few-flowered umbels which are borne in racemes or panicles. Flower parts (except pistil) in 5's or 4's, petals and stamens attached with base of ovary to a disk united to calyx tube. Petals curved at tips into form of hood, or wanting. Ovary generally 3-lobed, 3-celled (rarely 2-celled). Fruit a drupe or capsule.

Rhamnus L.

Shrubs. Leaves alternate. Flowers greenish, inconspicuous, bearing both stamens and pistils, or sometimes part staminate or pistillate, produced in umbels. Sepals partly united, forming a 4- or 5-lobed calyx, the upper part falling after blossoming. Petals small, incurved, or absent. Stamens 4 or 5. Ovary free from the calyx. Fruit fleshy, berry-like.

Rhamnus purshiana.
Cascara.

Rhamnus purshiana DC. **Cascara. Chittim.** Shrub or small tree, reaching 20 ft. in height; leaves deciduous, broadly elliptic-oblong, abruptly pointed at apex, obtuse or slightly heart-shaped at base, lateral veins conspicuously parallel, margin minutely toothed, petioles and young twigs velvety hairy; calyx-teeth 5; fruit black, with a sickly sweetish taste.

Common.

Ceanothus L.

Shrubs of small leaves, even with stiff spreading branches and imperfect or deciduous leaves. Flowers very small but borne in showy umbels or panicles, usually heavy-scented. Calyx 5-lobed or deeply parted to base of ovary. Petals 5, hooded or cleft, clawed. Stamens 5, opposite petals or sepals. Capsule somewhat heart-shaped, more or less 3-lobed, 3-celled, the 3 carpels long-separating.

Ceanothus velutinus Dougl. **Common bush.** Shrub usually 1 to 3 ft. tall, rarely slender and tree-like, leaves alternate, round-ovate to elliptic, strong but scanty above with very fine velvety beneath with close fine felt, margins entire, finely toothed and glandular on the margin, ½ to ¾ in. long, strongly 3-veined from base, with many lateral veins, petioles somewhat dilated and broad, flowers small, white, capsules 3-lobed, scarcely the upper part splitting off the base at the calyx line.

Found in the Coast Range and Cascades, both eastern and western slopes.

Ceanothus sanguineus Pursh. **Oregon tea. Buckbrush.** Slender shrub 3 to 9 ft. tall, with reddish branches; leaves alternate, broadly ovate to elliptic, obtuse at apex, obtuse or somewhat heart-shaped at base, smooth or nearly so, toothed, 1½ to 2½ in. long, with 3 conspicuous veins from the base, these with lateral branches; panicles dense, branched, with white flowers, pedicels, and peduncles; capsule 3-lobed.

Rather common.

Ceanothus cuneatus (Hook.) Nutt. **Greasewood. Buckbrush.** Shrub 3 to 12 ft. tall with stiff branches and branchlets spreading at right angles, twigs with gray bark, young twigs with soft grayish velvety covering of short hairs; leaves opposite, ob-

near apex; at maturity upper part of capsule separating from lower, leaving calyx and base of ovary attached to shrub.

Found principally on rocky or gravelly locations along old stream beds.

MALVACEAE. Mallow Family

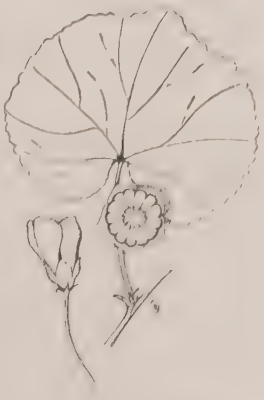
Herbs or shrubs with alternate simple palmately veined leaves and mucilaginous juice. Flowers generally perfect, rarely with stamens and pistils on different plants. Calyx 5-lobed, often with a circle of bractlets at base. Petals 5, united only at base, generally conspicuously veined, twisted in the bud. Stamens many, united in 1 or more series in a tube around pistil, the corolla base united with base of tube. Pistil composed of several to many carpels, with as many style branches and stigmas. Carpels separating at maturity, or fruit a several-celled capsule splitting to allow escape of seeds. Ovary superior.

Malva L.

Annuals, biennials, or perennials. Calyx 5-lobed, subtended by 3 bractlets united to base of calyx. Petals white or pink, broad, generally notched at apex. Style-branches 6 to 10. Fruit round, somewhat compressed, sectioned, the sections separating at maturity. Young fruits mucilaginous.

Malva rotundifolia L. **Cheese-plant.** Plant biennial, sparsely hairy, more or less prostrate, spreading, 1 to 2 ft. or more in diameter; leaves nearly circular in outline, generally 5- to 7-lobed, the shallow lobes toothed; corolla pink, lavender, or bluish, somewhat longer than calyx, ½ in. or less long; carpels about 15, minutely hairy.

Waste places and neglected gardens.



Malva rotundifolia.
Cheese-plant.

Malva moschata L. **Musk-mallow.** Plant perennial, sparsely hairy, erect, branching, 1 to 2 ft. tall; leaves roundish in outline, 5-cleft almost to base, the divisions pinnately cleft and toothed; corolla rose or white, 1½ in. or more in diameter, longer than calyx lobes; calyx hairy.

A European plant, escaped from gardens and naturalized in western Benton and Lincoln counties.

Sidalcea Gray.

Herbs with rounded palmately-veined leaves. Flowers pink, purplish lavender, or white, in terminal spikes or racemes. Flowers all perfect, or perfect flowers on 1 plant and pistillate on another. Bractlets none, or 1 and attached below base of calyx. Stamens united in 2 series. Carpels 5 to 9.

Sidalcea virgata Howell. **Showy wild hollyhock.** Stems slender, 1 to 3 ft. tall, smooth or finely hairy; foliage deep green; basal leaves roundish in outline, palmately cut half-way to base or deeper into 5 to 7 oblong toothed lobes, long-petioled; upper leaves more deeply cut, short-petioled; blades and petioles covered with minute hairs, these under a lens seen to be branched or star-shaped; flowers in a loose panicle, deep pink with magenta tinge, 1½ to 2 in. in diameter, showy; calyx densely covered with fine star-shaped hairs; petals broadest above the middle, 2-toothed.

Common along roadsides in April and May.

Sidalcea campestris.
Tall wild hollyhock.

Sidalcea campestris Greene. **Tall wild hollyhock.** Stem slender, little-branched, 2½ to 5 ft. tall, smooth below, slightly hairy near summit; foliage grayish-green; leaves roundish in outline, palmately cut nearly to the base into 7 to 9 slender divisions, these pinnately cut into narrow divisions; divisions of lower leaves slightly broader than those above; leaves somewhat stiff-hairy, hairs of the leaf blade mostly unbranched, those of the leaf petiole somewhat branched; flowers pale pink, 1¼ to 1½ in. in diameter, in a long terminal simple or somewhat branched spike; calyx densely covered with minute hairs, these under the lens seen to be branched and star-shaped, the hairs on the margins and veins of the sepals longer and forming a fringe; petals long, oblong or slightly obovate, 2-toothed at apex; carpels hairy and wrinkled at maturity, each flower subtended by a bractlet fringed with somewhat long hairs.

Common along roadsides in June and July.

HYPERICACEAE. St. John's Wort Family

Herbs, sometimes woody at base, or shrubs. Leaves opposite, entire, glandular. Sepals and petals 5 or 4. Stamens many, often conspicuously 3- to 5-grouped. Ovary superior, 1- or 3-celled, becoming a capsule. Styles 3 (in ours).

Hypericum L.

Annual or perennial herbs with sessile leaves. Flowers yellow, in a cyme.

Hypericum anagalloides. Water Saint John's Wort.

Hypericum anagalloides C. and S. **Water St. John's Wort.** Low mostly matted plants with slender 4-angled decumbent stems, ascending and very leafy above, often reddish; leaves very small at base, becoming larger toward tip, broadly ovate to elliptic, smooth, sessile, several-nerved at base; flowers spreading wheel-shaped, orange-yellow, about ¼ in. broad.

In and on the marshy margins of slow streams.

Hypericum perforatum. St. John's wort.

Hypericum perforatum L. **St. John's Wort.** Stems stout, often reddish, erect from a rootstock, more or less woody at base and producing slender stolons, sending out for half or more of its length slender, short, sterile branches, profusely branched above these, the upper branches slender, ending in a simple or compound cyme, and reaching approximately the same height, making the whole upper part of the plant appear like a single broad cyme 3 to 12 in. in diameter; leaves mostly ovate to oblong, entire, the margins rolled backward, ½ to 1 in. long, sparsely black-dotted and containing translucent glands, appearing (when held to the light) as if punctured by pin pricks; flowers deep yellow, nearly 1 in. in diameter; sepals narrow, acute; petals narrow, black-dotted; stamens in 3 groups; capsule not lobed.

A very serious weed pest on the Pacific Coast, spreading rapidly. After fruiting the whole plant turns a rusty brown, as if burned, and colors many acres of waste land in Oregon, Washington, and California, in late summer.

Hypericum formosum H. B. K. var. **scouleri** Coulter. **Slender St. John's Wort.** Somewhat similar to above, but leaves mostly broadly ovate to broadly elliptic; sterile branches mostly absent; sepals obtuse; capsule 3-lobed.

Found principally in moist places.

VIOLACEAE. Violet Family

Perennial herbs with alternate leaves. Stipules present. Flower parts in 5's. Corolla irregular, of 3 types of separate petals, upper (2), lateral (2), lower (1), this spurred at base. Filaments of stamens flattened and extending above the anthers which are borne on the inner faces. Ovary superior, 1-celled, with 3 placentae on the walls. Capsule 3-valved.

Viola L.

Flowers borne singly in the leaf axils. Sepals unequal in length, with ear-like projections at base. The 2 lower stamens with appendages prolonged into the spur of the lower petal. Seeds borne in the central line of each valve, forcibly thrown from the capsule at maturity.

Viola hallii Gray. **Wild pansy.** Stems several arising from a rootstock; leaves smooth, mostly palmately divided, the divisions again parted into narrow segments, the segments callous-tipped; the 2 upper petals deep purple or blue, the lateral and lower yellow to nearly white with purple veins at base; lateral petals slightly bearded at base; stigma bearded below summit.

Rare.

Viola sarmentosa Dougl. **Evergreen violet.** Stems above ground runner-like, arising with a cluster of leaves from the summit of a slender vertical rootstock; leaf blades ¾ to 1¼ in. long, round or somewhat elongated heart-shaped, with low rounded teeth, becoming brown-dotted; flower stems erect; flowers appearing somewhat flattened, pale yellow, sometimes purple-veined; capsules brown-mottled.

Common in open woods.

Viola nuttallii Pursh. **Hairy violet.** Stems and basal leaves arising from a short vertical rootstock; leaves broadly or narrowly

ovate to oblong, three-fourths to 2 in. long, obtuse or acute at apex, tapering at base or abruptly narrowed to petiole, margin entire or slightly toothed, both upper and lower surfaces short or long-hairy; flowers yellow, the lower and lateral petals brown- or black-veined.

In somewhat moist places, shaded by shrubbery or taller herbs.

Viola nuttallii.
Hairy violet.

Viola glabella Nutt. **Wood violet.** Leaves and stems arising from a horizontal rootstock; basal leaves $1\frac{3}{4}$ to $3\frac{1}{2}$ in. long, long-petioled, broadly heart-shaped with acute apex and rounded teeth; stem leaves few, similar to basal or narrower, on shorter petioles, smooth or sparsely hairy or minutely rough-dotted; petals deep yellow, the lateral and lower purplish-veined, lateral bearded; stigma with a short, slender, bent beak.

Viola glabella.
Wood violet.

Common in moist woods, particularly near streams.

Viola adunca.
Western blue violet.

Viola adunca Sm. **Western blue violet.** Stems many from base and tufted, 1 to 5 in. tall, with many leaves arising from a slender vertical rootstock; leaves broadly ovate to somewhat elliptic, obtuse or slightly heart-shaped at base, margin with low rounded teeth; flower stems longer than the leaves; petals from light violet to deep purple or nearly blue, rarely white, the lateral bearded at base, the upper slightly bearded.

Fields and hillsides on the coast-wise slopes, also in some parts of the Willamette Valley.

CUCURBITACEAE. Gourd Family

Mostly climbing or trailing fleshy herbs with palmately-lobed leaves. Stamens and pistils in different flowers. Calyx-tube united with ovary, in pistillate flower, its teeth narrow. Corolla attached to calyx, 5- to 7-lobed. Ovary inferior, 1- to 6-celled. Stamens rarely 1, usually 3, in staminate flower, 2 with 2-celled anthers, the third with 1-celled anther.

Echinocystis T. and G.

Trailing or climbing herbs with tendrils. Staminate flowers in axillary racemes or panicles, the pistillate solitary in the leaf axils, all small and whitish. Fruit gourd-like at first, becoming dry and bursting irregularly, 2 to 4 celled.

Echinocystis oreganus. Old man-in-the-ground.

Echinocystis oreganus Cogn. **Old man-in-the-ground. Wild cucumber.** Stems trailing or climbing, 3 to 25 ft. long, smooth or slightly roughened, with branching tendrils borne at the leaf-axils; leaves petioled, minutely rough-hairy, thin, broadly heart-shaped, 5- to 7-lobed, deep green; gourd-like fruits, 2¼ to 3½ in. long, broadly ovoid, generally beaked, conspicuously veined, prickly near the base, becoming dry.

ARALIACEAE. Aralia Family

Perennial herbs, shrubs, or trees, with simple or compound leaves having dilated petioles. Flowers in umbels, panicles, or racemes. Calyx entire or toothed. Petals 5. Stamens 5. Styles 2 or more. Ovary 2- to 5-celled, inferior. Fruit fleshy, berry-like.

Fatsia Dcne. and Planch.

Shrubs. Leaves simple, palmately lobed, long-petioled. Flowers with both stamens and pistils, or some with stamens or pistils only.

Fatsia horrida (Sm.) B. and H. **Devil's Club.** Stout shrub with stems, petioles, leaf veins, and peduncles densely clothed with sharp stiff yellowish prickles; leaves 4 to 12 in. broad, 5- to 7-lobed, the lobes sharply serrate and pointed; flowers greenish, small, in shortened umbel-like racemes borne in a long spike-like panicle, the branches subtended by hairy bracts. Fruits scarlet, the spike of colorful fruits very conspicuous in autumn.

Foot-hills of the Coast Range. The plant has a strong, rank odor.

UMBELLIFERAE. Parsley Family

Herbs with flowers in simple or compound umbels. Stems generally hollow, mostly rank-scented or fragrant. Calyx tube united with the ovary, the teeth small or absent. Petals 5, generally long-clawed, the blade turned inward or somewhat hooded. Stamens 5, alternate with the petals, attached to a disk above the ovary. Ovary wholly inferior. Styles 2, united at base. Ovules 2, pendulous. Fruit consisting of 2 carpels united at first, generally separating later from base upward.

Leptotaenia Nutt.

Tall perennial herbs with thick roots. Leaves pinnately compound, or divided in 3's. Fruits flattened, the lateral ribs with corky wings.

Leptotaenia dissecta Nutt. **Purple parsley.** Stems thickish, finely ribbed, hollow, 1½ to 3½ ft. tall; leaves with dilated petioles, the blades many times divided into narrow ultimate segments, minutely hairy; rays of umbel 20 to 30, subtended by several narrow bracts, each branch 1½ to 3 in. long, ending in a compact pompon ½ in. in diameter, of minute dark purple flowers (in ours), their short pedicels subtended by a few bractlets. Fruits woody or corky, ½ in. long, ¼ in. wide, brownish.

Common along roadsides.

Lomatium Raf.

Perennials with thick roots. Leaves several times divided, mostly from the base. Fruits flattened, the lateral ribs with thin wings.

Lomatium nudicaule (Pursh) C. and R. **Naked-stemmed hog-fennel.** Plants ¾ to 2 ft. tall; leaves all basal, divided first in 3's, each branch pinnately compound with 5 or more (rarely fewer) leaflets; leaflets ovate to lanceolate, generally smooth, ¾ to 2¼ in.

long; main rays of umbel 10 to 20, borne on enlarged summit of stem, rays unequal in length, 1 to 5 in. long, ending in dense head of small yellow flowers on short thread-like pedicels; fruits reaching ½ in. in length, oblong, or elliptic, with thin lateral wings.

Low hillsides.

Lomatium triternatum (Pursh) C. and R. **Hog-fennel.** Plants ¾ to 2 ft. tall, very short-hairy; leaves several times divided in 3's, then pinnate, the leaflets narrowly linear; rays of umbel 15 to 30, unequal, ½ to 3½ in. long in same umbel, without subtending bracts, rays ending with head-like cluster of small yellow flowers, bractlets lanceolate.

Low hillsides.

Lomatium utriculatum. Spring gold.

Lomatium utriculatum (T. and G.) C. and R. **Spring gold.** Stems 3 to 12 in. tall, erect, or earliest plants in spring spreading their leaves on the ground, their stems very short, scarcely rising above its surface; leaves 3 or 4 times divided into very small narrow segments, the petioles conspicuously inflated and veined, often reddish; umbels ¾ to 1¼ in. in diameter, nearly flat-topped, rays 5 to 7 (sometimes more), without subtending bracts, the rays unequal in length, ending in head-like clusters of small yellow flowers subtended at the base of their short pedicels by several short, broad bractlets; fruits ¼ in. long, elliptic, brown and yellowish striped, the wings broad, thin, and yellowish.

Hillsides. Among our earliest appearing spring flowers, when the plants are scarcely above the ground surface. Later plants are taller, and are found blossoming throughout the spring.

Heracleum L.

Tall stout-stemmed perennials from rootstocks. Leaves large, divided into 3's, the petioles broad and sheathing. Flowers small, white, in very large flat-topped compound umbels. Fruits very broad, strongly flattened, with thin lateral wings.

Heracleum lanatum Michx. **Cow parsnip.** Stems 4 to 7 ft. tall, thick, hollow, strongly ribbed, roughened on the ribs, and more or less woolly; leaflets 3, the terminal one rarely again divided, all lobed and irregularly toothed, 3 to 8 in. broad, the petioles broadly sheathing, generally densely woolly; umbels white, 4 to 12 in. broad.

Moist loamy ground, somewhat shaded by deciduous shrubbery.

CORNACEAE. Dogwood Family

Trees or shrubs, or low and woody only at the base. Leaves opposite, simple. Flowers small, in cymes or heads. Calyx united with the ovary, the 4 teeth very small or wanting. Petals 4, entirely separate. Stamens 4, attached in front of the sepals. Ovary 2-celled, with 2 ovules. Fruit fleshy, containing a 2-celled, 2-seeded stone.

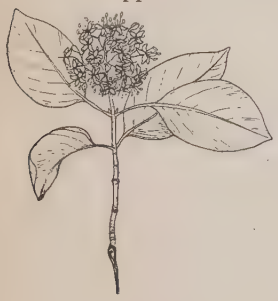
Cornus L.

Flowers white or greenish. Calyx teeth present, 4.

Cornus nuttallii Aud. **Common dog-wood.** Tree 10 to 40 ft. tall; leaves narrowly to broadly elliptic or obovate, generally abruptly acute at apex, tapering into petiole at base, 3 to 5 in. long; flowers in a compact head surrounded by 4 to 6 large conspicuous petal-like bracts, the bracts white or cream-colored, velvety, $1\frac{3}{4}$ to $2\frac{3}{4}$ in. long, broadest at the center, abruptly acute; fruits scarlet, $\frac{1}{2}$ in. or less long.

Cornus nuttallii.
Common dog-wood.

Common throughout northwestern Oregon. Flowers appear with or before the leaves and often again in autumn with the fruits. An attractive tree, the foliage turning deep red in autumn.



Cornus californica.
Creek dogwood.

Cornus californica C. A. Mey. **Creek dogwood.** Straggling shrub 4 to 15 ft. tall, with red or purplish branches; leaves long ovate to elliptic, acute at apex, obtuse or acute at base, 2 to 4 in. long, green above, lighter beneath, conspicuously veined, thinly covered with small horizontal hairs; cymes $1\frac{1}{2}$ to $2\frac{1}{2}$ in. broad; petals slender, white or cream; style somewhat hairy near base, fruit white.

Along streams.

Cornus canadensis L. **Bunch-berry.** Plant 3 to 8 in. tall from a slender creeping underground stem; leaves 4 to 6 in a whorl at

summit of aerial stem, several pairs of reduced leaves below, those near base of plant scale-like; leaves of whorl obovate, 1 to 2 in. long, conspicuously veined; flower cluster, surrounded by broad white bracts, appearing like a single white flower raised above leaf whorl on a short peduncle; fruits clustered, scarlet.

Cornus canadensis. Bunch-berry.

Margins of bogs and marshes.

ERICACEAE. Heath Family

Trees, shrubs, or perennial herbs. Leaves simple, mostly alternate, mostly evergreen, and leathery. Flowers white, pink, or red, regular, generally more or less bell-shaped, the parts in 5's or 4's. Petals usually united. Stamens not attached to corolla. Anthers 2-celled, generally awned. Ovary superior or inferior, 4- to 10-celled generally, with mostly axile placentae. Style and stigma 1.

Moneses Salisb.

Perennial herb from underground stems. Flower solitary at summit of stem. Leaves opposite or whorled. Calyx with 4 or 5 lobes. Petals 4 or 5, forming wheel-shaped corolla. Stamens 8 or 10. Capsule 4- or 5-celled.

Moneses uniflora. Single beauty.

Moneses uniflora Gray. **Single beauty.** Leaves in single or double whorl or pair near ground, flower stalk rising 2 to 6 inches higher; leaves thickish, ovate or nearly round, saw-toothed, ½ to 1 in. broad; flower ½ to ¾ in. broad, white, fragrant; stigma circular with 5 teeth.

Moist forests, generally near the coast.

Pyrola L.

Perennial herbs from underground stems. Leaves basal (rarely absent). Flowers in a terminal raceme. Calyx 5-lobed. Petals 5. Stamens 10. Capsule 5-celled.

Pyrola picta Smith. **White-veined shin-leaf.** Leaves several at base, leathery, deep green, veined with white, blades ¾ to 2½ in.

long, the same length as the petioles, margins entire or with minute teeth; flower stalk 6 to 15 in. tall; bracts small, triangular; flowers few or many, greenish-white, or pinkish-purple edged with white; style turned downward at base.

Common in open coniferous woods.

Pyrola picta.
White-veined shin-leaf.

Pyrola bracteata Hook. **Leathery shin-leaf.** Leaves many from base, the blades roundish, round-elliptic, or ovate, leathery, veiny, dark green above, paler beneath, shorter than the petioles; flower stalk 8 to 15 in. tall, with several thin bracts; flowers reddish, few to many, each subtended by a conspicuous narrow thin bract; calyx-lobes long-triangular, tapering, ½ to ¾ as long as petals; style turned downward at base and curved.

Coniferous woods.

Pyrola aphylla Smith. **Parasitic Pyrola.** Plant without true leaves; flower stalks reddish, 1 or several from rootstock, scaly, 6 to 10 in. tall; calyx red, sometimes whitish bordered; petals pink or white; style turned downward at base, nearly straight.

Found in coniferous woods. A rare form with minute green leaves was named **Pyrola aphylla paucifolia** by Howell.

Pyrola chlorantha Sw. **Shade-loving Pyrola.** Leaf blade thickish, not shining, ¾ to 1¼ in long, shorter than the petioles, margin entire or wavy; flower-stalk 4 to 10 in. tall, few-flowered; calyx lobes very short; petals longer, greenish-white; style turned downward, curved.

Deep coniferous woods.

Ledum L.

Shrubs with fragrant, alternate, entire, evergreen leaves. Flowers white, in corymbs. Calyx lobes 5, small nearly separate. Petals 5. Stamens 5 to 10. Fruit dry, 5-celled, many-seeded.

Ledum columbianum Pip. **Laborador tea.** Shrubs 2 to 3 ft. tall, bark smooth and brown; leaves oblong, 1½ to 2½ in. long, dark

green and smooth above, whitish and glandular beneath, with margins strongly inrolled; corymbs 1½ to 2 in. broad; flowers white with glandular pedicels; ovary hairy and glandular.

Ledum columbianum.
Labrador tea.

In bogs near the Columbia River and along the coast.

Ledum latifolium Ait. **Rusty Labrador tea.** Very similar to **L. columbianum,** but leaves rusty-woolly beneath. Plants less glandular.

In bogs along the coast.

Rhododendron L.

Shrubs (ours), with alternate leaves crowded beneath the flower clusters. Flower clusters terminal, the buds bearing early deciduous scales. Calyx 5-toothed, small. Corolla more or less bell-shaped, showy, usually somewhat irregular. Stamens 5 or 10. Style single, slender, topped by a knob-like stigma. Fruit a 5-celled capsule.

Rhododendron californicum. Hook. **Rhododendron.** Erect shrub, compact in the open, or with long straggling branches in thickets, reaching 8 or 10 ft. in height, or becoming a small tree 25 ft. tall; leaves leathery, evergreen, stiff, oblong or elliptic-oblong, narrowed at both ends or obtuse at base, green above, often rusty beneath, margins sometimes somewhat inrolled; calyx very small, 5-lobed; corolla varying from pale pink to deepest rose (rarely white), the lobes wavy-margined, the upper lobe dotted with green; stamens 10, shorter than corolla lobes; style shorter than corolla lobes, curved downward; ovary covered with reddish down.

Rhododendron californicum.
Rhododendron.

Along the coast, and in the eastern foot-hills of the Coast Range.

Menziesia Sm.

Shrubs with alternate deciduous leaves; flowers small, in umbels from terminal buds; sepals 4, very small; petals 4, united into a cylindrical or urn-shaped corolla; stamens 8; fruit a small, woody, 4-valved capsule.

Menziesia ferruginea.
Fool's huckleberry.

Menziesia ferruginea Smith. **Fool's huckleberry.** Erect shrub, 3 to 6 ft. tall, with reddish shreddy bark; branches often more or less grouped, appearing whorled; leaves thin, dark green above, pale beneath, 1½ to 2½ in. long, sparsely hairy above, obovate, acute at apex, tapering to a short petiole at base; flowers clustered at beginning of new year's growth, each on a slender stalk an inch long, the stalks glandular-hairy; petals 4, united almost to apex into an urn-shaped corolla, rusty or reddish yellow.

Found along the coast and in the Cascades.

Gaultheria shallon.
Salal.

Gaultheria L.

Shrubs or shrubby-based herbs with shining leathery everygreen leaves. Flowers urn-shaped, white or pink. Calyx and corolla 5-toothed. Stamens 10. Ovary somewhat flattened, 5-lobed, 5-celled, on a disk. Calyx becoming a fleshy covering to the ovary in fruit.

Gaultheria shallon Pursh. **Salal.** Straggling shrub 1 to 7 ft. tall; leaves orbicular, ovate, or oblong, narrowed at apex, broad or rarely narrowed at base, minutely serrate, dark and glossy above, paler beneath, 1½ to 4 inches long; racemes axillary and terminal, loosely flowered, 3 to 6 in. long; pedicels each subtended by a

concave white or reddish bract, and each bearing 2 bractlets; calyx red, at first small, becoming enlarged, fleshy and black in fruit; corolla white or pinkish, 5-toothed; corolla, calyx, pedicels, and peduncle glandular-hairy; fruits black with protruding styles.

Coast Range foot-hills; very abundant near the coast.

Arbutus L.

Evergreen trees or shrubs. Leaves leathery, shiny. Flowers in a large dense panicle. Corolla urn-shaped or nearly globular, 5-toothed, much larger than the 5-parted calyx. Stamens shorter than corolla; filaments hairy; anthers bearing awns. Ovary 5- or 4-celled, borne on a disk. Fruit fleshy with a granular surface.

Arbutus menziesii.
Madrone.

Arbutus menziesii Pursh. **Madrone. Madrono.** Tree reaching height of 100 ft. or more; bark reddish or golden, shining, the old bark peeling in long strips; leaves ovate or oblong, obtuse at base, acute or obtuse at apex, mucronate, dark green and glossy above, lighter beneath, smooth, minutely but sharply toothed on margin, 3 to 6 in. long; corolla waxy white, inflated, with 5 minute teeth curved back from apex, and 10 translucent glands at base; fruits slightly flattened, granular, scarlet or orange, ⅓ to ½ in. in diameter.

Coast Range.

An attractive tree with beautiful blossoms and fruit.

Arctostaphylos

Evergreen shrubs with dark red or red-brown smooth and polished bark. Leaves simple, generally entire, often standing edge upward by the twisting of the petiole. Flowers urn-shaped, white or pink in racemes or panicles. Flower parts generally in 5's. Sepals not united. Stamens 10, anther bearing a pair of awns; filaments generally hairy. Ovary situated on a disk, 4- or 5-celled, each cell 1-ovuled. Fruit fleshy.

Arctostaphylos columbiana Piper. **Hairy manzanita.** Shrub 4 to 9 ft. tall, much branched, the young twigs densely covered with long and short hairs; leaves pale green, with few hairs, oblong

to oblong-ovate, acute at apex, obtuse at base, entire or with very minute teeth; flowers white in short compact clusters; fruit ⅓ in. in diameter, somewhat flattened.

Found along the Columbia River.

Arctostaphylos uva-ursi Spreng. **Kinnikinnic.** Stems prostrate, trailing, with erect branching stems 3 to 6 in. tall; bark dark reddish-brown, peeling from the stems in large flakes; leaves generally obovate, mostly obtuse at apex, tapering to petiole at base, netted veins conspicuous, smooth or with short hairs when young; corolla ¼ in. long, white or pinkish; fruit deep scarlet or pink, smooth, ⅓ in. or more in diameter.

Arctostaphylos uva-ursi. Kinnikinnic.

Sandy places along the coast.

Vaccinium L.

Shrubs with alternate deciduous or evergreen leaves. Flowers small, urn-shaped to bell-shaped. Calyx-tube united with ovary, 5-lobed or entire. Stamens 10 or 8, corresponding to 5 or 4 corolla lobes, anthers 2-awned and opening by 2 pores. Ovary 5-celled (or 4), several- to many-seeded.

Vaccinium ovatum. Common evergreen huckleberry.

Vaccinium ovatum Pursh. **Common evergreen huckleberry.** Evergreen shrub 3 to 8 ft. tall; leaves thick, leathery, shining above, ovate-oblong, toothed, ¾ to 1½ in. long; flowers in small axillary racemes, pink or pinkish, bell-shaped, ¼ to ½ in. long; berry black, ¼ to ⅓ in. in diameter.

Along the coast.

Vaccinium caespitosum Michx. **Western blueberry.** Low deciduous shrub rarely higher than 2 ft.; leaves thin, obovate, whitish beneath, ½ to ¾ in. long, margins rarely toothed; flowers solitary or in 2s in the leaf-axils, white urn-shaped, generally 4-toothed; berry deep bluish-black with a bloom which makes them appear bright blue, ⅓ to ½ in. in diameter, drooping.

In swamps along the coast.

Vaccinium parvifolium Sm. **Red huckleberry.** Shrub 2 to 15 ft. tall, with sharply angled slender branches; leaves thin, deciduous, ovate to oblong, lighter green beneath, ½ to 1½ in. long, margins not toothed; corolla globular, greenish white; berry bright red, turned downward, mildly acid.

Rather common in the Coast Range.

Vaccinium caespitosum.
Western blueberry.

PRIMULACEAE. Primrose Family

Herbs with simple leaves. Flowers regular, with the parts generally in 5's. Sepals united at least at base. Petals united at least at base, into a tube. Stamens attached to tube, opposite the lobes. Ovary 1-celled, with a free-central placenta, superior (with 1 exception). Style 1, stigma 1. Fruit a capsule.

Vaccinium parvifolium.
Red huckleberry.

Dodecatheon L.

Perennial herbs with the leaves all basal. Flowers few or many in an umbel rising on a long peduncle generally above the leaves. Both calyx and corolla lobes turned backward in flower. Stamens sometimes united in a tube about the style.

Dodecatheon hendersonii.
Shooting-star.

Dodecatheon hendersonii Gray. **Shooting-star. Birdbill.** Leaves broadly-ovate to elliptic, somewhat fleshy, narrowed abruptly to a slender petiole borne in a flat rosette; flowering stem 6-14 in. long, green below, reddish above, bearing 3 to 12 flowers in a spreading umbel; flower parts generally in 5's (rarely 4's); calyx lobes long-ovate, sharp-pointed; corolla turned sharply backward, purplish-black in the

center, bordered by yellow, margined with white, with the lobes magenta, oblong, ¾ in. long or less; tube of filaments purplish black, filaments somewhat lighter purple or bluish; capsule opening by a dehiscent cap, then splitting longitudinally.

Trientalis L.

Small perennials from tuberous rootstocks. Stem unbranched, with scale leaves below, and crowned at apex by whorl of large leaves. Flowering-stems, each bearing a single flower, arise from center of leaf-whorl. Corolla wheel-shaped, deeply 5-, 6-, or 7-lobed. Stamens united at base, generally equal in number to corolla lobes and opposite them. Fruit a 5-valved capsule.

Trientalis europaea var. *latifolia.* Star-flower.

Trientalis europaea L. var. **latifolia** Torr. **Starflower.** Stem 3 to 6 in. tall from somewhat elongated tubers; scale-leaves minute, narrow; leaves of the whorl 3 to 6, broadly obovate, acute or obtuse at apex, tapering at base into a short petiole; corolla white to deep pink, star-shaped with 5 to 7 lobes.

Woods.

Anagallis arvensis. Pimpernel.

Anagallis L.

Small annual herbs with opposite (rarely whorled) leaves. Flowers solitary, slender-stalked, in the leaf axils. Corolla 5-lobed, wheel-shaped. Stamens 5, opposite the corolla lobes. Filaments hairy.

Anagallis arvensis L. **Pimpernel. Poor man's weather-glass.** A low decumbent or more or less erect plant, somewhat chickweed-like in habit; leaves broadly ovate, acute at apex, palmately veined, sessile, smooth or minutely roughened; corolla ½ in. or more in diameter, orange or salmon, with deep blue center; top of capsule separating from base at maturity, to allow escape of seeds; pedicels reflexed at maturity.

Somewhat rare in our limits.

OLEACEAE. Ash Family

Trees or shrubs with opposite (rarely alternate) leaves. Flowers small, generally greenish, in close panicles, usually imperfect. Petals united or separate, or absent. Ovary 2-celled, superior. Fruit a samara, drupe, or capsule.

Fraxinus L.

Trees or shrubs with pinnately compound deciduous leaves. Flowers perfect, or imperfect with stamens and pistils on different plants, or with both perfect and staminate or pistillate flowers on the same plant. Panicles small, appearing before the leaves. Calyx present, small. Corolla consisting of 2 petals, or absent. Stamens generally 2. Ovules 2 in each cell. Fruit a 1-winged samara containing 1 seed.

Fraxinus oregona Nutt. **Oregon ash.** Trees 50 to 120 ft. tall, with pale bark; leaves 8 to 12 in. long with 5 to 7 leaflets; leaflets oblong, tapering at both ends, sometimes toothed near apex, conspicuously downy when young particularly on lower surface, becoming smoother with age; samara oblanceolate, slightly notched at apex, 1 to 2 in. long.

Common along streams and in river bottoms.

APOCYNACEAE. Dogbane Family

Herbs with milky juice (ours), and simple opposite leaves. Sepals partly united, lobes 5. Stamens 5, borne on the corolla, alternate with its lobes, anther appendages at base united around ovary. Styles and stigmas united; ovaries 2, free, becoming follicles.

Apocynum L.

Flowers more or less bell-shaped, in cymes. Calyx-tube attached to back of ovaries. Stamens alternating at base of corolla with 5 small appendages.

Apocynum adrosaemifolium L. **Dog-bane.** Leaves ovate or oblong to nearly round, obtuse, square-cut, or slightly heart-shaped

at base, obtuse or acute and mucronate at apex, dark green above, lighter beneath, 1 to 2¼ in. long, with short petioles; flowers in small cymes; calyx very small, the teeth slender; corolla bell-shaped, ¼ in. long or more, pink with deeper pink veining, the lobes spreading; follicles 3 to 5 in. long.

Apocynum cannabinum. Indian hemp.

Found generally where somewhat shaded by other vegetation.

Apocynum androsaemifolium. Dog-bane.

Apocynum cannabinum L. **Indian hemp.** Plant somewhat similar to above, but taller (reaching 4 ft.), less branching; the flowers smaller, greenish, the corolla lobes erect.

Rare.

CONVOLVULACEAE. Morning-glory Family

Herbs, mostly twining or trailing, with alternate leaves, or plants leafless parasites. Sepals 5 separate, or united at base. Corolla bell- or trumpet-shaped, generally large and showy, folded and twisted in the bud. Stamens 5, attached to and shorter than corolla. Pistil 1, generally compound and 2-celled (rarely 1-). Ovary superior. Fruit in most cases a capsule.

Convolvulus L. Morning-glory. Bindweed.

Twining or spreading prostrate plants, annual or perennial. Style undivided or branched at the apex. Capsule inflated, 2-celled (or 1-celled through failure of other to develop).

Convolvulus nyctagineus Greene. **Hedge-row morning-glory.** Low herb, erect, or sometimes producing twining or trailing stems 1 ft. or more long; leaves mostly broader than long, obtuse and mucronate at apex, round arrow-shaped or heart-shaped at base, 1½ to 3½ in. long, without hairs; flowers mostly in the lower leaf axils,

subtended by 2 broad overlapping bracts; corolla broadly tubular, spreading slightly at the mouth, 2 to 2½ in. long, white or cream.

Common, growing generally in the shade of taller herbs or shrubbery.

Concolvulus nyctagineus.
Hedge-row morning-glory.

Convolvulus arvensis L. **Field or orchard morning-glory. Bindweed.** Stems trailing or twining, 1 to 3 or 4 ft. long, from deep-seated perennial roots; leaves narrow, arrow-shaped to hastate, with narrow acute lobes, somewhat hairy to nearly smooth; corolla spreading, bell-shaped, white or deep pink outside; bracts 2, narrow, near the middle of peduncle, latter sometimes several-flowered.

An introduced weed and one of our worst field and garden pests.

Concolvulus arvensis.
Field or orchard morning-glory.

POLEMONIACEAE. Phlox Family

Herbs, rarely somewhat shrubby at base. Leaves alternate or opposite. Flower-parts in 5's. Sepals partly united. Petals partly united, corolla regular. Stamens attached to corolla alternate with its lobes. Ovary superior, 3-celled. Stigmas 3. Fruit a capsule, opening by 3 valves.

Collomia Nutt.

Herbs. Leaves alternate. Flowers (in ours) in heads, each flower subtended by a leaf-like bract. Calyx broadly funnel-shaped, not splitting between the teeth with development of capsule, but widening to form outturned folds. Corolla narrowly trumpet-shaped, or the lobes spreading plate-shaped. Stamens unequal in length. Capsule 3-celled, containing 1 to several seeds in each cell.

Collomia grandiflora Dougl. Stem erect, generally unbranched, rarely much branched, 1 to 2½ ft. tall; lower leaves long (1 to 3 in.) narrow; leaves immediately beneath head of flowers, broader, minutely stiff-hairy; flowers trumpet-shaped, ½ to ¾ in. long, salmon-yellow, in a dense terminal head, with smaller heads sometimes in leaf-axils; bracts subtending the flowers, sticky-glandular; anthers blue.

Common in fields and on open hillsides.

Collomia grandiflora.

Collomia heterophylla. Vari-leaved colomia.

Collomia heterophylla Hook. **Vari-leaved Collomia.** Stem simple or branching, ⅓ to 1½ ft. tall; leaves varying much in shape and size, those beneath the flower clusters commonly broad, nearly entire; other leaves generally cleft or divided, the segments again cleft and toothed, all more or less sticky-hairy; flowers in bracted clusters at ends of branches; corolla slender, ½ to ⅔ in. long, the lobes spreading wheel-shaped, reddish-magenta, calyx less than ½ as long.

Margins of woods.

Phlox L.

Herbs, sometimes woody at base, with opposite entire leaves, and flowers in cymes. Calyx-tube narrow, membranous between lobes. Corolla-tube slender, the lobes spreading wheel-shaped at right angles to the tube. Calyx tube split by developing capsule.

Phlox gracilis.

Phlox gracilis (Hook.) Greene. Stems slender, simple or branched, 2½ to 10 in. tall, somewhat sticky-glandular; leaves lanceolate to oblong, hairy and glandular; corolla about ⅜ in. long, scarcely longer than the glandular calyx, the lobes pink or magenta, the tube generally yellow.

Common on hillsides.

Gilia R. and P.

Herbs, annual or perennial. Calyx-tube semi-transparent and papery at the junction of the teeth, splitting between teeth as capsule develops. Corolla trumpet-shaped to plate

shaped, the tube generally longer than the lobes. Seeds usually many.

Gilia capitata Dougl. **Field gilly-flower.** Stem slender, scarcely branching, 1 to 3 ft. tall, hairy, glandular, or smooth; leaves forming basal rosette and alternately placed on stem, decreasing in size upward, pinnately compound ,the leaflets often again cut into linear segments, or toothed, 2 to 4 in. long; flowers in dense heads at summit of stem or on axillary peduncles; heads blue, rarely white or lavender; corolla small, funnel-shaped, with long narrow lobes.

Common in fields.

Linanthus bicolor. Baby stars.

Linanthus Benth.

Annuals with opposite (the upper sometimes alternate) leaves palmately divided into narrow segments, or rarely entire. Calyx-tube membranous between the teeth.

Linanthus bicolor (Nutt.) Greene. **Baby stars.** Stem simple, 1 to 4 in. tall; leaves very small at base, becoming larger upward, palmately cut into very narrow divisions, the 2 much-divided leaves at a node, therefore, appearing as a whorl of simple leaves, short stiff-hairy; flowers in a dense head at the apex, subtended by 1 or more pairs of leaves; calyx lobes narrow, somewhat stiff and sharp, hairy; corolla ¾ to 1 in. long, much longer than the calyx, the tube thread-like, purplish or yellow, lobes pink to magenta, tube yellow.

Very common on hillsides; a beautiful little plant, but so small as to escape general notice.

HYDROPHYLLACEAE. Water-leaf Family

Herbs or shrubs. Leaves alternate or opposite or both on the same plant. Flowers solitary, or in heads, racemes or spikes (often 1-sided and curved inward). Sepals partly united into a 5-lobed calyx. Petals 5, partly united. Stamens 5, alternate with the corolla lobes. Style 1, entire or 2-cleft, or 2. Fruit a capsule, 1-celled, or 2-celled by the union of the placentae. Capsule opening by 2 or 4 valves.

Hydrophyllum Tourn.

Perennial herbs with alternate leaves mostly basal, pinnately parted or divided. Flowers blue, white, or lavender, in loose or compact head-like clusters. Corolla bell-shaped, with narrow internal scales, the edges joining in pairs to form nectar cavities. Stamens extending beyond corolla.

Hydrophyllum tenuipes Hel. **Water-leaf.** Plant branching, erect, succulent, 12 to 20 in. tall; stems mostly pale-green and watery, usually bearing downward-turning hairs; leaves rank, 4 to 8 in. wide, mostly with 5 segments or leaflets, the terminal much larger, all lobed or with large teeth, slightly hairy, calyx stiff-hairy; corolla open bell-shaped, bluish or lavender; stamens much longer than corolla.

Common on shaded stream banks.

Hydrophyllum tenuipes. Water-leaf.

Nemophila Nutt.

Annuals with opposite (or both opposite and alternate) leaves. Flowers in racemes or solitary. Calyx 5-lobed, with a small backward-turned appendage in each notch. Stamens 5, short, attached near base to corolla, alternating with 10 small scales in pairs. Style 2-cleft. Capsule 1-celled.

Nemophila menziesii var. *atomaria.* Pale baby blue-eyes.

Nemophila menziesii H. and A. var. **atomaria** Chandler. **Pale baby blue-eyes.** Stems several, branched, spreading or more or less ascending, angular, roughened by short backward-turned hairs; leaves pinnately 5 to 7 parted, the segments oblong, rough-hairy at least on margins, opposite, on long petioles; flowers long-stalked, broadly cup-shaped, ¾ to 1½ in. in diameter, white, more or less blue-veined, generally black dotted within, hairy at center.

Fields. Not widely distributed, but abundant where it occurs.

Nemophila sepulta Parish. **Small nemophila.** Stems several, somewhat stout, spreading or weakly ascending, angular, branched, minutely roughened by down-turned hairs, 1½ to 7 or 8 (rarely more) in. long; leaves opposite or some alternate, 5 -to 9-parted, the segments entire or toothed, rough-hairy; calyx-lobes alternating with reflexed appendages nearly as long as themselves; corolla cup-shaped or broader, ⅛ to ¼ in. in diameter, white or bluish, sometimes dotted or veined with blue or purple, the throat with hairy lines.

Nemophila sepulta.
Small nemophila.

Nemophila parviflora Dougl. **Wood nemophila.** Stems decumbent or weakly ascending, rough with down-turned hairs, internodes long; leaves pinnately 5-parted or lobed, the segments broad, toothed; calyx appendages much smaller than sepals.

Nemophila parviflora.
Wood nemophila.

Phacelia Juss.

Perennial herbs with alternate (lower sometimes opposite) leaves. Flowers mostly showy, purplish or blue, in conspicuously scorpoid cymes. Calyx deeply 5-parted. Corolla wheel-shaped to funnel-shaped, often with internal scales. Stamens attached to corolla. Fruit a 1-celled or sometimes artificially 2-celled capsule.

Phacelia heterophylla Pursh. **Phacelia.** Branching plants, 1½ to 2½ ft. tall, more or less covered with stiff hairs, often grayish-hairy; leaves with a pair of small leaflets at base, or with only 1 leaflet, or the uppermost leaves often simple, more or less grayish-hairy; inflorescence branched, each branch turned inward at tip scorpion-like; flowers white or bluish, broadly funnel-shaped, the internal scales narrow; stamens extending beyond corolla.

Dry open ground.

Romanzoffia Cham.

Small herbs. Leaves mostly basal, roundish, somewhat lobed, with long petioles. Stem leaves alternate. Flowers in a raceme.

Sepals nearly separate. Corolla white or pinkish, funnel-shaped. Style slender, undivided. Ovary 2-celled or nearly so.

Romanzoffia unalaschensis Cham. Plant bearing basal tubers, foliage hairy; leaves thickish, kidney-shaped to nearly round, with about 9 lobes; stems erect, few-leaved or naked, 3 or 4 in. tall, bearing short terminal racemes; corolla white.

On moist rocks along the coast. Rare.

BORAGINACEAE. Borage Family

Herbs, generally rough-hairy. Leaves alternate or rarely opposite, or both alternate and opposite on same plant, simple. Flowers in 1-sided scorpoid cymes, rolled inward, and unrolling during flowering. Sepals 5, united at base. Petals united at base into a long or short tube, forming a 5-lobed corolla. Stamens 5, attached to corolla alternate with its lobes. Ovary generally 4-lobed, superior, usually dividing at maturity into 4 1-seeded nutlets. Nutlets smooth or more often warty or prickly. Style generally 1, sometimes 2-cleft or none.

Cynoglossum grande.
Western hound's tongue.

Cynoglossum L.

Perennial herbs (ours), with blue flowers in a loose compound scorpoid cyme. Corolla crested at throat. Nutlets covered with prickles.

Cynoglossum grande Dougl. **Western hound's tongue.** Coarse erect herb 1 to 3 ft. tall, smooth or hairy; leaves long-ovate, stiff-hairy beneath, the blades 4 to 8 in. long, the petioles of the lower leaves longer; flowers in a loose branching inflorescence; corolla spreading wheel-shaped, ¼ to ½ in. broad, pink at first, becoming deep clear blue, with conspicuous white crests in the throat; nutlets bur-like.

Open woods.

Mertensia Roth.

Perennial herbs with erect or weak stems bearing blue or pink and blue flowers. Leaves and stems generally without hairs. Leaves large. Throat of corolla crested. Stamens attached to corolla. Style and stigma 1. Nutlets rough, attached slightly above base.

Mertensia denticulata (Lehm.) Piper. **Blue-bells. Lungwort.** Stems weakly erect; leaves sparsely short-hairy, especially below, broadly ovate, acute or long-tapering at apex, obtuse to square-cut, or even slightly heart-shaped at base, 2 to 5 in. long, the lower long-petioled; flowers in loose few-flowered cyme at summit of stem, peduncle generally bearing 1 or 2 leafy bracts, pedicels long; calyx very short; corolla tubular, abruptly widened at middle, lobes scarcely spreading, pink at first, becoming a clear light blue at maturity.

Mertensia denticulata. Blue-bells.

Shady, moist margins of woods.

Myosotis L.

Ours very small annuals or perennials, soft-hairy. Corolla with prominent crests in throat. Nutlets small, smooth and shining.

Myosotis macrosperma Engelm. **White forget-me-not.** Plants erect or spreading, strict or freely branching; leaves obovate to oblong, decreasing gradually in size upwards, lowermost tapering at base into a broad petiole, upper sessile, stiff-hairy, mucronate; upper part of stem forming a long scorpoid cyme resembling a raceme, becoming 4 or 5 in. in length, lowest flowers borne in leaf axils, upper flowers bractless; lateral cymes present on larger plants; calyx clothed with long hairs slightly hooked at tips; flowers white; nutlets light brown, convex on outer face, angled on inner face, keeled between faces.

Common on "white" land which is very wet in winter and very dry in summer.

Myosotis macrosperma. White forget-me-not.

Myosotis lutea (Car.) Pers. var. **versicolor** (Pers.) Thell. **Small blue forget-me-not.** Plants more or less tufted after the first year, 4 to 10 in. tall; leaves oblong or obovate-oblong or upper ovate, upper abruptly sessile, lower narrowed toward base, stiff-hairy; flowers minute, corolla yellow at first, changing to deep blue ,the base of corolla tube remaining yellowish; calyx densely clothed with stiff hairs

mostly hooked at tips; nutlets very dark brown, smaller than those of **M. macrosperma,** more strongly pointed at apex.

Amsinckia Lehm.

Rough-hairy annuals, the hairs often with enlarged, hardened bases. Flowers yellow in elongating scorpoid cymes, resembling 1-sided racemes. Calyx-lobes generally 5. Corolla with a long tube, the lobes spreading plate-shaped at right angles with tube, the tube with inner folds but without crests. Nutlets smooth or rough.

Amsinckia intermedia. Fiddle-neck.

Amsinckia intermedia F. and M. **Fiddle-neck.** Sometimes erroneously called tar-weed. Plant erect, somewhat branching above, 12 to 30 in. tall, rough-hairy throughout; lower leaves oblong, narrowing slightly downward toward base, but abruptly dilated at base; upper leaves long-ovate, sessile, with entire or irregular margins; corolla-tube very slender, lobes pale or deep yellow; hairs on inflorescence, tawny; nutlets angled, transversely wrinkled, and granular, brown.

An introduced weed, more common in eastern than in western Oregon.

Allocarya scouleri. Scorpion grass.

Allocarya Greene.

Low herbs with narrow leaves, the lowest always opposite. Calyx lobes not falling at maturity, but somewhat increasing in length as the fruit develops. Crests on throat of corolla generally small or none. Nutlets attached at base or slightly above.

Allocarya scouleri (Hook. and Arn.) Greene. **Scorpion grass.** Stems several to many, erect or spreading, appressed hairy, 4½ to 16 in. long; leaves narrowly lanceolate or oblong, hairy, the lower opposite; flowers in scorpoid cymes, closely inrolled in bud; calyx hairy, often brown; corolla ⅓ in. in diameter, spreading wheel-shaped, lobes white; tube yellow, crests well developed, yellow; nutlets not stiped, nor elongated at apex.

Common on low ground which is very wet in winter and very dry in summer.

Allocarya stipitata Greene. Similar to above, varying principally in the nutlets which are conspicuously stiped, and elongated at apex. Distribution similar to that of **A. scouleri.**

Allocarya hispidula Greene. **Small scorpion-grass.** Somewhat similar to the above species, but very much smaller, the stems slender, 2 to 6 in. long; flowers almost microscopic; nutlets minutely bristly, not prolonged into a point at apex as in **A. stipitata.**

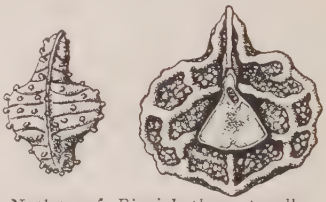
Nutlets of (a) *Allocarya hispidula;* (b) *A. stipitata;* (c) *A. scouleri.*

Distribution similar to that of **A. scouleri.**

Plagiobothrys F. and M.

Annuals. Leaves and stems covered with soft white or brown hairs. Leaves alternate, mostly near the base. Flowers in elongating scorpoid cymes resembling racemes, or in head-like clusters. Flowers white. Corolla tube short, with crests closing the throat, lobes spreading wheel-shaped. Nutlets keeled on both back and front and sometimes on the sides, wrinkled, attached above the base, a round scar remaining after nutlet breaks away.

Plagiobothrys tenellus (Nutt.) Gray. **Small popcorn flower.** Stems generally several from the base, branching, mostly erect, 2 to 8 or 10 in. tall; leaves ovate to lanceolate, mostly in a basal rosette, stem leaves smaller; hairs white, or tawny on the inflorescence; flowers very small ,white, in raceme-like arrangement; nutlets grayish green, shining, closely wrinkled transversely, the wrinkles warty.


Nutlets of *Piagiobothrys tenellus* (left) and *P. nothofulvus* (right).

On land which is very wet in winter and baked in summer.

Plagiobothrys nothofulvus Gray. **Popcorn flower.** Plants erect or nearly so, stems 1 or more from base; roots and petioles and mid-ribs of basal leaves purplish; lower leaves long, narrowed to base, then dilated; upper leaves lanceolate; hairs of stems and leaves white, rusty on pedicels and calyx-lobes; flowers $\frac{1}{5}$ to $\frac{1}{3}$ in. in diameter; calyx-lobes falling away in fruit, leaving tube as cup enclosing nutlets; nutlets grayish green, the transverse wrinkles distant, the rectangles bounded by the wrinkles and keels more or less filled with small whitish warts.

Found with **P. tenellus.**

LABIATAE. Mint Family

Herbs or shrubs with 4-angled stems and simple opposite leaves, generally fragrant. Flowers borne singly or in cymes in the leaf-axils, often so densely that they appear whorled on the stem. The leaves sometimes become bract-like above, making the inflorescence appear spike-like or head-like. Sepals partly unitd, equal or unequal. Corolla tubular below, more or less 2-lipped. Stamens 4, in 2 pairs, all anther-bearing, or 2 anther-bearing and 2 sterile, or sterile wanting, all attached to corolla. Ovary superior, 4-lobed or parted, dividing at maturity into 4 nutlets. Style 1, 2-lobed at summit.

Micromeria Benth.

Fragrant evergreen vine with long trailing slender stems and white flowers in the leaf axils. Corolla 2-lipped. Stamens 4, all anther-bearing.

Micromeria douglasii Benth. **Oregon tea. Yerba buena.** Stems slender, prostrate, or at first erect, ½ to 2 or 3 ft. long, from long running rootstocks, more or less hairy; leaves very broadly ovate to nearly round, irregularly toothed, smooth, or somewhat hairy, gland-dotted, blades ½ to 1 in. long; calyx and corolla short-hairy without, the former conspicuously ribbed; flowers generally in pairs at a node, i. e., 1 in each axil of opposite leaves, white.

Common in open woods. Deliciously fragrant, it is one of our most-loved Pacific Coast herbs. Leaves and stems often purplish in winter.

Micromeria douglasii. Oregon tea.

Stachys L.

Hairy mostly erect herbs (ours), with the inflorescence spike-like in appearance. Corolla distinctly 2-lipped. Stamens 4. Plants mostly with a disagreeable odor, especially when bruised.

Stachys palustris L. **Hedge nettle.** Perennial; stems erect, simple or somewhat branched, 1 to 4 ft. tall, hairy all over, the stiff hairs on the angles turned downward; leaves long-ovate to lanceolate, coarsely toothed, acute at apex, square-cut or somewhat

heart-shaped at base, sessile, or lower very short-petioled; flowers in an interrupted spike, 6 to 10 in a whorl; calyx hairy; corolla tube scarcely longer than calyx, the lips projecting beyond, the upper erect, the lower spreading at right angles, purplish, purple dotted.

Moist places.

Stachys bullata Benth. Somewhat similar to **S. palustris**, but differs in having the leaves all at least short-petioled, often broader, and corolla tube slightly longer than calyx.

Shady places.

Stachys pubens (Gray) Heller. Leaves broad, more or less heart-shaped at base, long-petioled; corolla-tube twice as long as calyx or nearly so.

Marshy places, especially near the coast.

Stachys ciliata.
Giant hedge-nettle.

Stachys ciliata Dougl. **Giant hedge-nettle.** Stems 2 to 6 ft. tall; leaves long petioled, broadly or narrowly ovate to oblong, acute or acuminate at apex, 2 to 6 in. long; flowers showy, large, in loose spike-like arrangement, reaching 1¼ in. or more in length, deep red or magenta, lower lip of corolla white-spotted.

A very showy plant. Common in marshes.

Lamium amplexicaule.
Dead nettle.

Lamium L.

Hairy annual or perennial herbs. Corolla strongly 2-lipped, the upper lip in bud enclosing the lower, like a cap. Plants not fragrant.

Lamium amplexicaule L. **Dead nettle.** Annual, stems generally several from base, prostrate at first, ends ascending, hairy; upper leaves fan-shaped, palmately-veined, coarsely lobed or toothed, sessile; lower smaller, round heart-shaped, toothed, and petioled; all hairy; flowers in dense whorls in upper axils; calyx hairy; corolla narrow-tubular, ¾ in. long, purplish-red, upper lip cap-like, erect, velvety-

hairy without; lower lip spreading at right angles, paler, purple-dotted.

A common garden weed, often a winter-annual in Western Oregon.

Lamium maculatum L. **Perennial dead nettle.** Somewhat similar to **L. amplexicaule**, but perennial, more leafy, the upper leaves reddish-tinged, all the leaves petioled, ovate, heart-shaped at base, with broad white splotch along mid-rib.

Rather rare, but a noxious weed where introduced.

Lamium maculatum. Perennial dead nettle.

SOLANACEAE. Nightshade Family

Herbs or shrubs with alternate leaves. Flowers regular, solitary or borne in terminal or axillary umbel, panicle, or cyme. Calyx 5-toothed or lobed. Corolla 5-lobed. Stamens 5, attached to corolla tube. Ovary superior, 2-celled. Style 1, stigma 1 or 2. Fruit dry or fleshy.

Datura L.

Coarse herbs, often large and ill-smelling. Ovate leaves mostly petioled. Flowers showy, borne singly in the axils of branches. Calyx 5-toothed, tubular, generally persistent in part at base of fruit. Corolla trumpet-shaped, broad at the mouth, longer than the stamens. Fruit a spiny, falsely 4-celled capsule, splitting at maturity into 4 or an indefinite number of valves.

Datura stramonium. Jimson weed.

Datura stramonium L. **Jimson weed. Jamestown weed.** Erect, 2 to 5 ft. tall; leaves 3 to 8 in. long, broad, sparsely hairy, margin irregularly wavy or toothed; corolla white or cream-colored, with a long narrow tube, widening rather abruptly near the mouth, 4 in. or more long; capsule large with upper spines $\frac{3}{4}$ in. long, the lower shorter.

An Old World weed, not very common.

Solanum L. Nightshade

Herbs (sometimes shrubby at base). Flowers in lateral or terminal umbels. Corolla-tube very short, lobes spreading wheel-shaped. Anthers slightly attached, forming tube about pistil, opening by longitudinal splitting or by pores. Fruit berry-like.

Solanum nigrum L. **Nightshade.** Low spreading (or sometimes erect) annual with dark green foliage, smooth or somewhat hairy; leaves broadly to narrowly ovate, acute at apex, tapering to petiole at base, margin nearly entire or irregularly toothed or wavy, 1 to 4 or 5 in. long; corolla white or purplish, less than ½ in. broad, the lobes with hairs on outer surface near tips; filaments and style hairy; berries black or dark blue, several on a peduncle, somewhat recurved.

Old gardens and waste ground. The berries are said to be poisonous, but this statement is disputed.

SCROPHULARIACEAE. Figwort Family

Herbs or shrubs with simple leaves. Sepals generally partly united. Petals partly united, generally forming a 2-lipped corolla. Stamens 5, or 4 in 2 pairs, with 5th stamen sometimes represented by a gland or sterile filament, or 1 pair sometimes sterile, or stamens only 2. Ovary superior, 2-celled. Style 1. Stigma 1 or 2. Fruit a 2-celled capsule, splitting to allow escape of seeds, or opening by pores.

Collinsia Nutt.

Annuals with opposite leaves, and flowers whorled in a raceme or axillary. Calyx 5-lobed. Corolla turned downward at a sharp angle with base of tube, swollen or spurred above, 2-lipped. Upper lip erect, 2-lobed. Lower lip 3-lobed, the central lobe folded to enclose stamens and style. Fertile stamens 4 in 2 dissimilar pairs, the 5th stamen represented by an inconspicuous gland at base of corolla.

Collinsia parviflora Dougl. **Small innocence.** Stems 1 to several from base, 3 to 10 in. tall (rarely taller); leaves lanceolate or ovate to oblanceolate or obovate, short-petioled or upper nearly sessile, entire or toothed, minutely hairy, opposite or upper leaves

several in a whorl, green, or whole plant sometimes reddish; flowers borne in the leaf axils; corolla scarcely longer than the calyx, $\frac{1}{3}$ in. (more or less) long, pale blue and lavender; pedicels elongating in fruit and sometimes turned downward.

Common in fields.

Collinsia grandiflora Dougl. **Large innocence.** Stem erect or somewhat spreading, stoutish or slender, 4 to 14 in. tall, more or less short-hairy; leaves opposite below, mostly whorled above; lower leaves roundish or short-oblong, long-petioled, several-toothed or entire; upper leaves long lanceolate, scarcely petioled, entire or somewhat toothed; flowers in upper leaf axils; pedicels short-hairy, corolla about $\frac{1}{2}$ in. long, much longer than calyx, tube lavender, lobes deep blue.

Collinsia grandiflora. Large innocence.

Rather common, in fields. One of our most beautiful spring-flowering plants.

Tonella Nutt.

Plants similar in general appearance to **Collinsia**, but the corolla tube nearly straight (not bent at a sharp angle as in **Collinsia**), and some of the stem-leaves generally 3-parted or divided.

Tonella collinsioides. Baby innocence.

Tonella collinsioides Nutt. **Baby innocence.** Stem slender, $2\frac{1}{2}$ to 10 in. tall, simple or branched at base; first leaves roundish in outline, palmately 3- to 5-lobed or entire, about $\frac{1}{4}$ in. broad, long-petioled; upper stem leaves petioled to nearly sessile, divided into 3 narrow leaflets, these toothed or entire; flowers minute, very pale blue, the corolla somewhat 2-lipped, with tube nearly straight.

Moist shady places. Often found growing with mosses on stumps and tree trunks.

Scrophularia L.

Large perennial herbs with opposite leaves, and reddish flowers in panicles of small cymes. Calyx 5-lobed. Corolla tubular, irregular, 5-lobed, the 2 upper longest, the upper and lateral erect, the

lower turned downward; 4 stamens anther-bearing, the 5th scale-like beneath the upper corolla lip.

Scrophularia oregana. Figwort.

Scrophularia oregana Pennell. **Figwort.** Stem 2 to 6 ft. tall with few branches or none; smooth; leaves ovate, square-cut, or somewhat heart-shaped at base, coarsely toothed; inflorescence sticky-glandular; corolla broadly tubular, $\frac{1}{3}$ in. long or less, reddish, with a nectar gland at base; capsule dark brown, $\frac{1}{4}$ in. long.

Rare in the Willamette Valley; common toward the coast.

Mimulus L.

Annual or perennial herbs with opposite leaves. Flowers generally showy, in racemes or solitary in the leaf axils. Calyx 5-lobed, 5-angled. Corolla more or less 2-lipped, the tube 2-ridged on lower side. Stamens 4. Stigmas 2, sensitive to touch.

Mimulus moschatus Dougl. **Wild musk.** Stems weakly ascending, 6 to 12 in. tall, from a slender creeping rootstock, covered at least below with white slimy hairs, musk-scented; leaves ovate to somewhat oblong toothed, pinnately veined, hairy; flowers $\frac{3}{4}$ to 1 in. long; calyx and corolla hairy externally; lobes of corolla nearly equal.

Along streams.

Mimulus alsinoides Dougl. **Baby monkey-flower.** Stems weakly ascending to rather stiffly erect, simple or branching, 1 to 10 or 12 in. tall, rarely reaching 15 in., smooth; leaves broadly ovate, toothed, tapering to a petiole, palmately veined, $\frac{1}{2}$ to 1 in. long (or much shorter in low specimens), flowers $\frac{3}{8}$ in. or less long; corolla 2-lipped, yellow, with a deep red or purplish red spot in lower lip.

Mimulus guttatus. Common monkey-flower.

Lake shores, banks of streams, and on rocks exposed to spray.

Mimulus guttatus D. C. **Common monkey-flower.** Stems erect, sometimes rooting from several basal nodes, some plants sending

out runners which root at the nodes and send up smaller flowering plants; lower leaves petioled, smooth or slightly hairy, roundish or somewhat elongate, appearing palmately veined or sometimes distinctly pinnate, raggedly toothed, often with several small irregular lobes at base, sometimes purplish beneath; upper leaves without petioles, broadly ovate, toothed, the leaves of a pair meeting around stem; corolla 1 to 2 in. long, strongly 2-lipped, deep yellow with purplish or brownish dots in throat.

Common along streams and in swamps. A variable species in which several distinct varieties have been described.

Mimulus denatus.
Woods monkey-flower.

Mimulus dentatus Nutt. **Woods monkey-flower.** Stem weakly erect from running rootstocks, somewhat hairy or smooth, 10 to 15 in. tall; leaves thin, ovate to long ovate, coarsely toothed, pinnately veined, the lower petioled, the uppermost sessile or nearly so; corolla 1 to 1¾ in. long, deep yellow, bearded and purple-dotted within.

Mimulus douglasii.

On wet banks in shady woods.

Mimulus douglasii Gray. Low plant 1½ to 2 in. tall, simple or somewhat branched; leaves ovate or oblong, ½ to ¾ in. long or less, ovate or oblong, entire or toothed; corolla 1½ in. long, the tube very slender below, broader above, 2 or 3 times as long as calyx, red-purple, the upper lip broadly 2-lobed and showy, the lower reduced generally to a small lobe, the lateral lobes wanting.

Found mostly on low "white" land which is very wet in early spring and very dry later.

Gratiola L.

Small annual herbs with opposite sessile leaves, and flowers borne singly in the leaf axils. Calyx and corolla irregular, the lat-

ter 2-lipped. Fertile stamens 2. Sterile stamens none or rudimentary.

Gratiola ebracteata Benth. Stems erect, 2 to 10 in. tall, somewhat fleshy, branching, short glandular-hairy; leaves long ovate to lanceolate, sessile, parallel-veined, entire or toothed, glandular-hairy or smooth, becoming longer and narrower upward; calyx longer than corolla; corolla inflated-tubular with short lips, the tube yellowish, the lips white or pinkish with delicate lavender veining; stamens 2, fertile; sterile stamens absent; capsule nearly as long as calyx.

Along slow streams.

Synthyris Benth.

Perennial herbs, the leaves all basal, and these with the flower-stalks arising from rootstocks. Flowers borne in a raceme. Calyx and corolla 4-lobed. Stamens 2, attached to corolla tube on upper side. Capsule somewhat flattened.

Synthyris rotundifolia.
Spring queen.

Synthyris rotundifolia Gray. **Spring queen.** Plants 2 to 8 in. tall; leaves smooth to very short-hairy, kidney-shaped to heart-shaped, ½ to 3 in. broad, coarsely lobed, with 3 to 5 conspicuous veins from the base, and long petioles; flowers blue (rarely white), borne in a short somewhat scorpoid raceme.

Shady moist woods.

This is one of our longest-season spring flowers, the first blossoms appearing in January or even as early as November in a mild season, and continuing until May or June. The color of the flowers is an unusually pure deep blue, making the plant very desirable for borders in the wild garden.

Veronica L.

Shrubs or herbs (ours) with flowers in racemes or solitary. Bractlets none on pedicels. Calyx (in ours) 4-lobed. Corolla somewhat wheel-shaped, 4-lobed, slightly irregular, the upper lobe larger. Stamens 2, attached to corolla at sides of upper lobe. Capsule flattened, notched or heart-shaped.

Veronica americana Schwein. **Common speedwell.** Perennial; stems ¾ to 2 ft. tall, branching, weakly, ascending, often decumbent,

and rooting at lower nodes; leaves 1½ to 3 in. long, ovate to oblong, petioled, acute at apex, obtuse to slightly heart-shaped at base, smooth, thickish; racemes in the leaf axils, on long peduncles with elongated spreading pedicels subtended by narrow bracts; flowers bright blue with white center and conspicuous veining; capsule notched.

In slow streams, common.

Veronica americana. Common speedwell.

Veronica scutellata L. **Narrow-leaved speedwell.** Perennial; stems ½ to 1½ ft. tall, weakly ascending, often rooting at the lower nodes; leaves lanceolate, without petioles, entire or minutely and distantly toothed, smooth or sparingly hairy, ¾ to 2½ in. long, whole plant sometimes purplish or reddish; racemes axillary, as long as or somewhat longer than the leaves; flowers on spreading pedicels from the axils of narrow bracts; corolla blue, the veins conspicuous; capsule deeply notched.

In slow streams, common.

Veronica serpyllifolia L. **Thyme-leaf speedwell.** Stems more or less decumbent, rooting at lower nodes, ends erect; leaves mostly opposite or upper alternate, hairy or smooth, broadly ovate to oblong, entire or toothed, upper leaves becoming narrow bracts subtending solitary flowers; corolla pale blue, darker veined, or nearly white; capsule notched, hairy.

Moist places.

Veronica peregrina L. **Neckweed.** Annual; stems generally several, erect or somewhat spreading, 3 to 12 in. tall, both stems and leaves with very short hairs; leaves alternate or the lower opposite, lowest petioled, oblong, entire or toothed, becoming smaller upward, flowers white, solitary in the upper leaf axils, on very short pedicels; capsule small, slightly notched.

Moist places.

Veronica arvensis L. **Small speedwell.** Annual; stems weakly ascending or spreading, 3 to 12 in. tall, slender; leaves alternate above, opposite below, the lower broadly ovate, palmately veined, round-toothed, becoming narrower and smaller upward; flowers solitary in the upper leaf axils; capsule heart-shaped at apex, hairy.

Low fields.

Digitalis L.

Biennial with alternate leaves and long terminal raceme of conspicuous tubular flowers. Calyx 5-lobed. Corolla tube large, lips inconspicuous. Stamens 4, shorter than corolla tube.

Digitalis purpurea. Foxglove.

Digitalis purpurea L. **Foxglove.** Plant heavy-stemmed, erect, 3 to 5 ft. tall, soft-hairy; leaves in large basal tuft the 1st year, these 5 to 15 in. long, ovate, narrowed below to long petiole, the veins of the blade conspicuous; upper leaves becoming gradually smaller with shorter petioles; bracts ovate; corolla conspicuously inflated, particularly on lower side, purple with lower side of throat whitish and purple-dotted; flowers somewhat drooping ,and more or less turned to one side of the raceme.

Introduced from Europe. Common toward the coast.

Castilleia Mutis.

Perennial herbs, or sometimes woody at base. Leaves alternate, without petioles. Bracts and calyx red or yellow, more conspicuous than the more or less hidden pale yellow, red, or greenish corolla. Calyx 2-cleft, the clefts 2-toothed, or 2-lobed. Upper lip of corolla flattened at sides, and enclosing style and stamens. Lower lip much shorter, 3-lobed or 3 toothed.

Castilleia angustifolia. Indian paintbrush.

Castilleia angustifolia G. Don. **Indian paintbrush.** Plants erect, little branched, 6 to 15 in. tall, covered with soft hairs, the upper bracts also glandular-hairy; lower leaves undivided; upper leaves with 3 to 5 pinnate lobes; bracts 3- to 5-lobed, the central lobe broader, lateral lobes of bracts and leaves widely spreading; tips of bracts and corolla brilliant scarlet; spikes dense.

Dry fields.

Orthocarpus Nutt.

Annual or perennial herbs. Leaves mostly alternate, without petioles, the bracts subtending the flowers often bright-colored. Flowers in spikes or racemes. Calyx 4-lobed or cleft or 2-cleft, and the divisions 2-lobed. Upper lip of corolla narrow; lower lip with 3 sac-like inflations more or less developed; upper and lower lips nearly equal in length. Stamens 4.

Orthocarpus pusillus Benth. Stems 1 or several from base, erect or more or less decumbent, 2 to 5 in. tall, whole plant purplish; first leaves minute, entire, becoming increasingly pinnately cleft above, the divisions again cleft into narrow segments; bracts longer than the minute reddish or purple flowers.

Common on hillsides and in pastures, making marked masses of color, but inconspicuous individually.

Orthocarpus attenuatus. Slender owl's clover.

Orthocarpus attenuatus Gray. **Slender owl's clover.** Stems slender, erect, little branched, generally not clustered, 4 to 12 in. tall, whole plant covered with short white hairs; leaves long-lanceolate, gradually tapering at apex, upper leaves generally with 3 narrow lobes; bracts 3-lobed, generally with white tips; calyx-lobes 4, narrow; corolla dirty-white or yellow, the lips shallow; sacs of lower lip small, with purple or blackish dots.

Common.

Orthocarpus bracteosus. Purple owl's clover.

Orthocarpus bracteosus Benth. **Purple owl's clover.** Plant erect, little branching, 4 o 15 in. tall, covered with slender hairs and stalked glands; leaves long-lanceolate or the upper 3-lobed, the lobes spreading; bracts broad with 3 spreading lobes; spike compact; flowers somewhat exceeding the bracts, purple or lavender; upper lip of corolla slender, hooked at apex; lower lip with 3 much inflated sacs; anthers hairy; bracts purplish.

Fields and roadsides, often forming conspicuous purple patches.

OROBANCHACEAE. Broom-rape Family

Root-parasitic herbs without green color, the leaves reduced to alternate scales. Flowers complete. Petals united into a more or less 2-lipped tube. Stamens 4, in pairs of 2 lengths, attached to corolla-tube. Ovary superior, 1-celled. Fruit a capsule, opening by 2 or 4 valves. Seeds many, very small.

Orobanche L.

Small yellow or purplish plants, sometimes sticky-hairy. Sepals 5, partly united, pointed at tips. Petals 5, united to near the tips in a long curved tube. Stamens shorter than tube. Fruit dry, opening by 2 valves.

Orobranche uniflora. Naked broom-rape.

Orobanche uniflora L. **Naked broom-rape.** Stem mostly underground, scaly, bearing 1 to 5 or more flowers on long slender peduncles; calyx lobes tapering to a narrow point, longer than the calyx-tube; whole plant purplish tinged, this color in the corolla deepening to violet or deep purple.

Rather rare.

PLANTAGINACEAE. Plantain Family

Low herbs with the leaves all basal. Sepals 4. Petals 4, partly united, tissue-like. Stamens 4 or 2. Ovary superior, 2- or 4-celled.

Plantago L.

Flowers in spikes or heads, each flower subtended by a bract. Sepals persistent in fruit. Corolla with a short tube, the lobes spreading. Stamens alternating with the corolla lobes (rarely 2). Ovary 2-celled, or falsely 4-celled, opening by a dehiscent lid.

Plantago major. Broad-leaved plantain.

Plantago major L. **Broad-leaved plantain.** Rosette of leaves more or less flattened against the ground, or sometimes erect; flower-stalks erect, 3 to 12 in. tall; leaves smooth or generally with short hairs, round-ovate to elliptic, margin entire or irregularly toothed, veins conspicuous, 5 to 9 major veins from base; flower-stalks shorter than the leaves to much longer, spikes 3 to 19 in. long; capsule 2-celled.

A weed common particularly along river bottoms. Grows rather readily in hard beaten ground of paths and dooryards if moisture supply is sufficient.

Plantago lanceolata L. **English or black plantain.** Plant erect, 15 to 30 in. tall; leaves short-hairy, long-lanceolate, 3- to 5- (rarely 7-) ribbed; spike short, ¾ to 1½ in. long, dense, the stamens long-exserted.

A common garden and roadside weed. Sheds quantities of pollen and is said to be troublesome as a hayfever plant.

RUBIACEAE. Madder Family

Herbs or shrubs with entire leaves opposite or whorled. Flower parts in 4's or sometimes 5's in Sherardia. Ovary inferior, 2-celled in ours, splitting into 2 (rarely 4) 1-seeded sections.

Sherardia L.

Small annual with 4-angled stems and whorled leaves. Flowers in heads subtended by an involucre. Calyx-teeth small at first, elongating after flowering. Flower parts 4 or 5 (rarely 6). Fruits separating into 2 parts.

Sherardia arvensis. Field madder.

Sherardia arvensis L. **Field madder.** Stems weak, erect or somewhat trailing, 3 to 13 in. long, 4-angled, short hairy; leaves ovate to elliptic, mucronate, $\frac{3}{8}$ in. long or less, 4 to 5 in a whorl; flowers pink or lavender, small, several in a head subtended by leaf-like involucre bracts.

Common on open hillsides.

Galium L.

Herbs, sometimes woody at base, often trailing, with 4-angled stems. Leaves in whorls or some opposite. Flowers in cymes. Fruit dividing into 2 parts.

Galium triflorum Michx. **Fragrant bedstraw.** Stems weak, erect or trailing, $\frac{2}{3}$ to $1\frac{1}{2}$ ft. tall, from a creeping rootstock; leaves 6 in a whorl; flowers 2 or 3 in a cyme, the cymes stalked in the leaf-axils; fruit covered with hooked hairs.

Open woods and shrubby areas.

Galium bifolium Wats. **Twin-leaved bedstraw.** Annual; stem slender, erect, $1\frac{1}{2}$ to 5 in. tall, mostly unbranched; leaves opposite or in whorls of 4 with 2 opposite leaves in each whorl shorter than the other 2; fruits with hooked hairs.

Rare in our limits.

Galium aparine L. **Goose-grass. Bed-straw. Cleavers.** Stems weak, trailing or climbing, 1 to 3 ft. long, rarely short and erect,

4-angled, rough, short-hairy or smooth; leaves 6 to 8 in a whorl, ½ to 1½ in. long; flowers 1 or 2 in a long-stalked cyme, or cymes sometimes compound; fruits covered with short stiff hooked hairs.

Common in somewhat shaded places.

CAPRIFOLIACEAE. Honeysuckle Family

Erect or twining shrubs, or low trees. Leaves opposite. Calyx-tube united with the ovary, the teeth small or wanting. Corolla regular or irregular, generally 5-lobed. Stamens generally equal in number to corolla lobes. Ovary 2- to 5-celled. Fruit fleshy or dry.

Sambucus L.

Shrubs or small trees. Leaves compound, with a terminal leaflet, deciduous. Flowers small, white or cream, in a showy terminal syme, jointed to the pedicels. Calyx of united sepals, 5-toothed. Corolla of united petals, wheel-shaped, 5-lobed. Ovary 3- to 5-celled. Ovules solitary in each cell, attached at top. Fruit fleshy, berry-like, containing several bony nutlets.

Sambucus glauca.
Blue elderberry.

Sambucus glauca Nutt. **Blue elderberry.** Bush or small tree, 6 to 25 ft. tall; leaflets 5 to 9, sometimes again divided, 2 to 6 in. long, slender-pointed at apex, acute or obtuse at base, toothed; compound cyme flat-topped, 4 to 9 in. broad; flowers very small, cream-colored; fruits ¼ in. in diameter, dark blue covered with a white bloom, giving them a light blue color in mass.

Moist situations.

Sambucus racemosa L. var. **callicarpa** Jepson. **Red elderberry.** Bush or rarely a small tree, 8 to 20 ft. tall; leaflets 5, narrow, oblong, 2 to 5 in. long, slender-pointed at apex, acute at base, serrate, downy beneath and sometimes above; compound cyme dome-shaped, 2½ to 5 in. broad; flowers very small, cream-colored; fruits red, ⅕ in. in diameter.

Moist situations.

Viburnum L.

Shrubs with simple leaves with toothed, lobed, or entire margins. Flowers jointed to the pedicels, white or cream-colored with wheel-shaped or shallow cup-shaped corollas of 5 partly united petals, borne in a compound cyme; sepals united, with 5 small teeth; fruit a drupe; stone flattened.

Virburnum ellipticum. Western way-faring tree.

Viburnum ellipticum Hook. **Western way-faring tree.** Deciduous shrub 5 to 12 ft. tall; young stems and under surface of leaves thinly covered with short slender hairs or minute glands, or both; leaves broadly obovate or elliptic to nearly round, 2 to 3 in. long; dark green above, lighter beneath, somewhat thick, with 3 to 5 conspicuous veins from the base, upper half of margin coarsely toothed; cymes 1½ to 2¼ in. wide; corolla ¼ to ⅓ in. broad; drupe black, ellipsoid, ½ in. long; stone flattened, 2-grooved on one face and 3-grooved on other.

Found not very abundantly along streams and in edges of deciduous woods.

Linnaea L.

Trailing evergreen herb, somewhat woody at base. Leaves opposite. Flowers borne in pairs, nodding, at the tips of erect stalks. Corolla bell-shaped. Stamens 4, 1 pair longer. Capsule 3-celled, only 1 cell producing fertile seed.

Linnaea borealis var. *americana.* Twin-flower.

Linnaea borealis L. var. **americana** Rehder. **Twin-flower.** Stems slender, trailing over the ground or decaying logs, 6 to 12 in. or more long; leaves small, opposite, somewhat leathery, conspicuously netted-veined, toothed above the middle; flower stalks 2½ to 3½ in. long, erect, each bearing a pair of bell-shaped flowers; ovary inferior, hairy, surrounded by hairy bracts; corolla pink and white, smooth without, hairy within.

Found mostly in moist shady woods.

Symphoricarpos L.

Low shrubs with deciduous leaves. Leaves thin, simple. Flowers white or pink, generally borne in compact terminal or axillary

racemes, each flower subtended by 2 minute bracts. Calyx tube globose, teeth 4 or 5. Corolla tube-bell-shaped, 4- or 5-lobed. Stamens attached within corolla tube. Ovary 4-celled, only 2 cells developing. Fruit a white pulpy berry.

Symphoricarpos albus.
Snow-berry.

Symphoricarpos albus (L) Blake. **Snow-berry.** Shrub erect, branching, 3 to 5 ft. tall; leaves short-petioled, varying in shape on a single plant from nearly round to ovate or oblong, and entire, toothed, or lobed, obtuse at apex, acute at base, ½ to 1 in. long (sometimes much larger on young vegetative shoots); lower surface paler than upper; corolla white to pink, inflated on lower side at base, 5-lobed, densely covered within with white hairs; berries globose or nearly so, often deformed by crowding.

Common. The foliage of this shrub is very fragrant in the rain, and the thick clusters of white berries borne in close association with the scarlet fruits of wild rose, add much to the attractiveness of roadsides in winter.

Symphoricarpos mollis Nutt. **Mountain snow-berry.** Shrub lower and more spreading than **S. albus** and branches more slender; leaves oval or oblong, occasionally lobed or toothed, mostly entire; flowers pale to deep pink, corolla scarcely hairy within.

Generally found at higher altitudes than **S. albus.** Common in the Coast Ranges.

Lonicera L.

Shrubby plants, erect or twining, with opposite simple leaves, the two leaves of a pair sometimes united around the stem below the flowers. Flowers in pairs or small clusters in the leaf axils or in larger clusters at the apex of the stem. Calyx teeth small or sometimes wanting. Corolla 5-lobed, nearly regular, or very irregular and 2-lipped, the tube often swollen at one side of base. Ovary 2- or 3-celled, becoming a berry.

Lonicera ciliosa Poir. **Climbing honeysuckle.** Twining about other shrubs to a height of 10 or 15 ft., or sometimes ovate ,gen-

erally obtuse at apex, mucronulate, tapering rather abruptly at base into petiole, green above, bluish beneath, 2 to 4 in. long, with fringe of minute hairs on margin; the leaves beneath the inflorescence united into saucer-shape, the next pair below united at least at base; flowers in a terminal compact raceme, solitary or accompanied by two or more slender-stalked lateral racemes; corolla 1½ to 1¾ in. long, orange-red, somewhat 2-lipped; stamens as long as or slightly longer than the corolla.

Lonicera ciliosa.
Climbing honeysunkle.

Lonicera involucrata var. *ledebourii.*
Bush honeysuckle.

Lonicera involucrata Banks var. **ledebourii** Jepson. **Bush honeysuckle. Twinberry. Ink-berry.** Erect bushy shrub 4 to 8 ft. tall; leaves oblong, ovate, or rarely obovate, obtuse at base, or sometimes tapering to petiole, the two sides often uneven, abruptly acute at apex or sometimes rather long-acuminate, 2 to 4½ in. long, generally hairy beneath and fringed on the margin with short hairs; flowers borne in pairs on long peduncle in the leaf axils, the flowers sessile between broad bracts which become reddish or dark red as the fruit matures; corolla yellow or reddish, ½ to ¾ in. long, nearly regular, the tube somewhat swollen at the base, glandular-hairy; stamens shorter than the corolla; berries black.

Along streams, especially near the coast.

VALERIANACEAE. Valerian Family

Herbs with flowers borne in cymes. Leaves opposite. Calyx-tube united with ovary, lobes generally none. Corolla attached at top of ovary, 5-lobed, regular or generally 2-lipped.

Stamens 1 to 3 borne on corolla tube. Ovary inferior 3-celled, 2 of the cells generally not developing, often open and forming wings to the developing cell. Latter 1-seeded. Style 1.

Valerianella Tourn.

Smooth annuals with angled stems. Flowers small, irregular, borne in head-like or spike-like compound symes. Fruits generally winged.

Valerianella congesta. Corn-salad.

Valerianella congesta Lindl. **Corn-salad.** Stems slender or stoutish, 1½ to 14 in. tall, with 3 or 4 pairs of leaves distantly placed; leaves smooth, ovate to obovate, sessile (or the basal with short petioles), clasping the stem, mostly obtuse at apex, somewhat mucronate; flowers in dense head-like or interrupted spike-like arrangement; flowers very small, pink, with a slender tube, spurred, the slender spur ⅓ to ½ as long as tube; fruit broadly winged, hairy.

Very common.

Valerianella samolifolia Gray. **Blue-flowered corn-salad.** Plants somewhat similar in appearance to **V. congesta,** but with regularly forking stems; flowers bluish, borne in compact leafy flat-topped compound cymes, these in pairs at the summits of branches; fruits furrowed on 1 side but not winged.

Not common.

Valerianella samolifolia. Blue-flowered corn-salad.

CAMPANULACEAE. Bell-flower Family

Herbs with alternate leaves and milky juice. Calyx 5-lobed, generally persistent. Corolla 5-lobed. Ovary inferior, 2- to 5-celled. Style 1, branched at apex. Fruit a capsule.

Campanula L. Blue-bell

Small herbs with blue more or less bell-shaped flowers. Calyx lobes narrow. Capsule with as many openings as compartments.

Campanula prenanthoides Dur. **Slender blue-bell.** Stems several, erect, branching, 1½ to 2 ft. tall; leaves ovate to lance-shaped, coarsely and sharply toothed, petioles none or very short; flowers in a long loose raceme or panicle; calyx lobes very slender, much shorter than corolla; corolla lobes long, narrow, at first forming a tube, later spreading and curving backward, dark blue.

Open woods.

Campanula scouleri Hook. **Pale blue-bell.** Stem prostrate at base, erect above, generally not branching, ½ to 1 ft. tall; leaves ovate to lance-shaped, sharply toothed; petioles mostly ½ as long as blade or longer; flowers in loose raceme or panicle; calyx lobes slender, shorter than corolla; corolla pale blue or whitish, its lobes ovate, curving backward at maturity.

Open woods.

Campanula prenanthoides. Slender blue-bell.

Githopsis Nutt.

Low annuals with small alternate leaves. Flowers solitary on ends of stems. Calyx tube slender, 10-ribbed. Corolla bell-shaped. Ovary inferior, 3-celled. Stigmas 3. Fruit a ribbed capsule, bearing at its summit the 5 stiff persistent calyx-lobes.

Githopsis specularioides Nutt. Stems 1 to several, simple or sending out near tip, branches longer than main stem, these sometimes behaving similarly, minutely hairy; leaves minute at base, becoming somewhat larger upward, sessile, roundish to narrowly oblong, mostly distantly toothed; calyx-tube becoming thick-ribbed, tapering to peduncle; calyx-lobes shorter or longer than corolla. Corolla blue to magenta.

Open hillsides. Not common.

COMPOSITAE. Sunflower Family

Herbs or shrubs, with small flowers in close heads, subtended at base by a whorl of bracts forming an involucre. Ovary wholly inferior, becoming a seed-like akene, crowned by

the corolla and by the calyx in the form of teeth, scales, bristles, etc., or the calyx absent. Stamens 5, attached to the corolla, generally united by the anthers. Corollas tubular and generally 5-toothed (in disk flowers) or strap-like (in ray-flowers). The modified calyx in the composites is called the pappus.

Tragopogon L.

Tall biennial or perennial herbs. Leaves lanceolate, clasping the stem. Heads large, showy, on long peduncles, purple or yellow. Involucre bracts in 1 series, slender. Only ray flowers present. Akenes roughened, ribbed, mostly long-beaked. Pappus rays long, plume-like.

Tragopogon porrifolius. Salsify.

Tragopogon porrifolius L. **Salsify. Vegetable oyster.** Stem stiffly erect from a fleshy tap-root, 1½ to 4 ft. tall; leaves lanceolate ,long-tapering to apex, 8 to 14 in. long at base, becoming shorter upward; heads 2 to 2½ in. high, the peduncle swollen below head; flowers deep purple, the involucre bracts much longer than the flowers; akenes with pappus 2 or more in. long, slender, roughened, long-beaked, the pappus tawny.

Found along roadsides. An escape from gardens. The flower heads generally close during the day.

A yellow-flowered species, **Tragopogon pratensis** L., in which the involucre bracts are shorter than the flowers, is rarely found in our limits.

Hypochoeris L.

Annual or perennial herbs with leaves clustered at base, from which arise several-flowered peduncles. Leaves pinnately parted or toothed. Involucre bracts in several series, all erect. Akenes slender, beaked, bearing hair-like pappus.

Hypochoeris radicata L. **False dandelion. Gosmore. Chinese lettuce.** Flowering stalks ½ to 2 ft .tall, from basal cluster of leaves; leaves pinnately lobed or parted, the lateral lobes mostly oblong, mostly entire, short and stiff-hairy; flower-stem branched, each branch bearing 1 or more heads, the head which terminates the primary stem opening first; akenes slender, roughened toward the apex, long-beaked, bearing plume-like pappus.

A very common lawn and garden weed. Much more abundant

than dandelion and often mistaken for dandelion by the unobserving. Used, like dandelion, for greens.

A smooth form, **Hypochoeris glabra** L., an annual, occurs occasionally.

Taraxacum Haller.

Biennials or perennials, the leaves all basal. Heads yellow, terminal, single, on hollow peduncles. Leaves pinnately parted or toothed. Outer bracts of involucre often turned backward, inner erect. Akenes ribbed, the ribs with minute spines toward apex, slender-beaked, bearing soft hair-like pappus.

Taraxacum vulgare (Lam.) Schrank. **Common dandelion.** Leaves and flower stalks clustered at base of plant, 3 to 8 or more in. tall; leaves thin, deep green, pinnately parted, the larger segments somewhat triangular, entire or with slender soft teeth, these also often following the axis between segments, smooth or sparsely long-hairy; outer bracts of the involucre turned backward; heads deep yellow, large; akenes short-spiny near upper end, beaked; pappus white or brownish.

Taraxacum vulgare. Common dandelion.

Common, blossoming very early in the spring, and continuing through the early months.

Erigeron L.

Aster-like herbs but many species blossoming in the spring, and with the involucre scales in only 1 or 2 series, nearly equal in length, scarcely overlapping. Both ray and disk flowers commonly present, the ray flowers generally numerous. Akenes flattened. Pappus of hair-like bristles.

Erigeron linearis (Hook). Piper. **Fringed daisy.** Stems many from base, slender, more or less erect, 8 to 14 in. tall, grayish-hairy, more or less branched above; leaves many, very narrow, the lower slightly oblanceolate; heads solitary, terminal on the stems, about ⅔ in. in diameter, the rays lavender, pinkish, or white, disks yellow.

Shady places, not common.

Balsamorhiza Hook.

Perennials with leaves mostly basal. Stems bearing 1 or several large heads of both ray and disk flowers. Pappus none.

Balsamorhiza deltoidea Nutt. **Balsam root.** Basal leaves and stems clustered, 1½ to 2½ ft. tall; basal leaves broadly more or less arrow-shaped, with rounded lobes, long-petioled, rough, the margins entire, wavy, or round-toothed below; stem-leaves petioled, ovate or lanceolate, tapering to petiole; heads sunflower-like, 2½ to 3¼ in. broad, with leaf-like involucre bracts mostly turning downward; pappus none.

Balsamorhiza deltoidea.
Balsam root.

Hillsides.

Wyethia Nutt.

Stems and leaves clustered at base. Heads large, yellow, solitary, or several on a stem, both ray and disk flowers present. Pappus of stiff scales or bristles.

Wyethia angustifolia Nutt. **Wild sunflower.** Leaves and stems clustered, 1 to 2½ ft. tall; basal leaves long-ovate or long-elliptical, tapering at both ends, petioled, entire or slightly toothed, rough; upper leaves similar but much smaller, or uppermost sessile, not tapering at base; heads sunflower-like, 2½ to 3 in. broad, golden yellow to nearly orange, the involucre bracts leaf-like, sometimes purplish at base; pappus of 1 or 2 stiff bristles at the angles, with small scales between.

Wyethia angustifolia.
Wild sunflower.

Hillsides.

Madia Mol.

Sticky-glandular, strong-scented annual or perennial herbs. Leaves mostly alternate. Heads with both ray and disk flowers, the ray-akenes each enfolded by an involucre bract, these in 1 series, and falling with the akenes. A circle of bracts between ray and disk flowers remains to form a cup. Pappus generally none.

Madia elegans.
Showy tar-weed.

Madia elegans Don. **Showy tar-weed.** Stems slender, erect, simple below, 1 to 2 or more ft. tall with simple and glandular

hairs; leaves narrow, oblanceolate to lanceolate, distantly toothed, those at base sometimes purplish, 2 to 4 in. long, upper becoming gradually smaller and narrower, hairy; heads showy, few to many, mostly long-peduncled, axillary and terminal, yellow, spreading 1 inch or more in diameter, the ray flowers long; peduncles and involucre bracts hairy and glandular.

Eriophyllum lanatum. Woolly sunflower.

Tar-weed fields are favorite feeding grounds for the gold-finches when the akenes are ripe.

Eriophyllum Lag.

Woolly herbs, sometimes woody at the base. Leaves alternate. Both ray and disk flowers generally present, at least the disk-flowers yellow. Pappus of chaffy scales, or none.

Eriophyllum lanatum (Pursh) Forbes. **Woolly sunflower.** Stems more or less decumbent at base, 1 to 1½ ft. tall, woolly at first; leaves mostly 3- to 7-pinnately lobed (except the lowermost and uppermost, which are narrowly lanceolate or oblanceolate), the lobes narrow, densely white-woolly beneath, less so above; heads on long terminal or axillary peduncles, orange-yellow, 1 to 1¾ in. in diameter, the involucre woolly.

Common on hillsides and in somewhat dry fields.

Chrysanthemum L.

Herbs with large showy heads solitary on long peduncles. Ray-flowers white; disk-flowers yellow. Akenes ribbed.

Chrysanthemum leucanthemum var. *pinnatifidum.* Marguerite.

Chrysanthemum leucanthemum L. var. **pinnatifidum** Lecoq. and Lemotte. **Marguerite, Ox-eye daisy.** Perennial, stems generally many from base, 1 to 2 ft. tall, somewhat branched, the branches bearing solitary terminal heads; leaves obovate, the lower with short-lobed blades tapering to long petioles, the upper with long blades, mostly sessile, all more or less pinnately lobed to parted; heads 1¾ to 2 in. broad, ray flowers white, disk yellow.

Very common.

Tanacetum L.

Perennial herbs with strong-scented foliage, leaves alternate. Heads clustered. Ray flowers none. Akenes ribbed or angled with broad apex. Pappus of scales, or none.

Tanacetum huronense. Seaside tansy.

Tanacetum huronense Nutt. **Seaside tansy.** Stems stout, erect or somewhat decumbent, ¾ to 1½ ft. tall, somewhat woolly; leaves pinnately 2 or 3 times divided, reaching 4 or 5 in. in length, and 2 or more in width, with scattered white hairs; heads hemispheric, dense, ½ in. or more broad, a tarnished yellow.

Petasites Gaertn.

Perennial herbs with creeping rootstocks which produce flower stems with scale-like leaves, and later send up basal leaves of a very different type. Flower heads in large dense nearly flat-topped terminal clusters. The flowers of certain plants mostly fertile, those of others mostly sterile. Akenes ribbed. Pappus white, cottony.

Petasites palmata. Sweet colts-foot.

Petasites palmata (Ait.) Gray. **Sweet colts-foot.** Flowering stalks arise very early in spring, closely covered with broad, sessile, clasping scales; flower heads ½ in. or more high, in a dense terminal nearly flat-topped cluster; flowers white or pinkish; basal leaves, appearing after the flower, in closed umbrella-form at first, opening as 7- to 9-palmately lobed and veined long-petioled blades, the lobes more

or less toothed, green and smooth or short-hairy above, covered beneath with dense felt-like surface of white hairs.

Shaded stream banks.

Senecio L.

Herbs or shrubs. Leaves alternate. Heads solitary or in cymes. Involucre bracts erect in 1 or 2 series, equal in length, rarely with short bracts at base. Akenes cylindrical. Pappus abundant, cottony.

Senecio vulgaris L. **Groundsel.** Stem erect or slightly decumbent, ribbed, erect or branched, 4 to 12 in. tall, smooth or more or less long white-hairy; leaves pinnately lobed or parted, more or less toothed; heads cylindrical, $\frac{3}{8}$ in. long, without ray-flowers, in small crowded cymes; involucre bracts narrow, black-tipped, forming a cup nearly as long as the flowers.

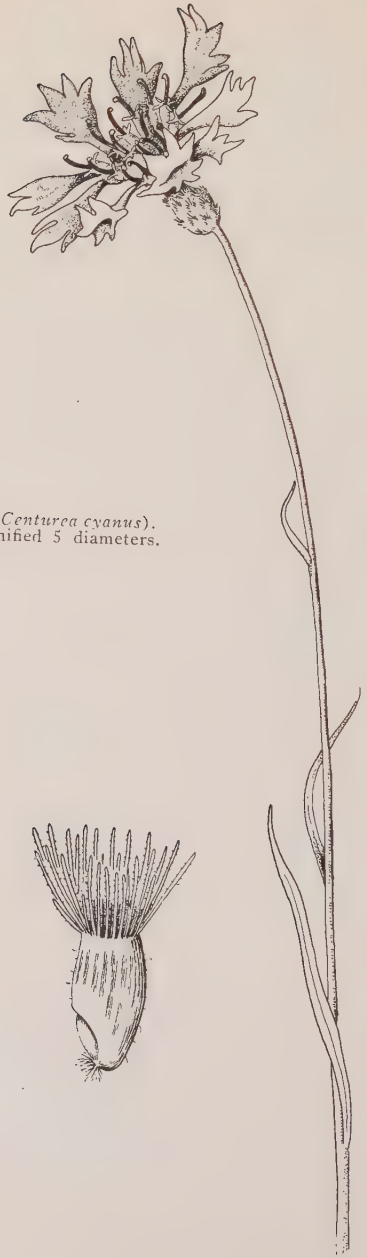
A common garden weed.

Centaurea L.

Stiff herbs with alternate leaves without prickles. Heads generally showy. Involucre bracts in several series, overlapping, generally fringed, toothed, or prickly. Only disk-flowers present, but the outer circle of these much larger, resembling rays.

Centaurea cyanus L. **Bachelor's button. Corn-flower. Bluebottle.** Stems erect, 1 to $2\frac{1}{2}$ ft. tall, somewhat woolly; earliest leaves toothed or often pinnately parted to divided with narrow segments; upper leaves linear; heads solitary and terminal on main stem and branches; involucre bracts fringed, usually margined with red or black; flowers blue, purple, pink, or white, those on the margin much enlarged, ray-like, and showy.

A common grain-field weed.



French Pink (*Centurea cyanus*).
Seed-case magnified 5 diameters.

Glossary

Aborted, said of parts which have imperfectly developed, as stamens consisting of filaments only.
Acrid, sharp, burning, irritating.
Acuminate, tapering to a long point.
Acute, sharply pointed but not long-tapering.
Aggregate fruit, collection of separate but closely associated carpels from one flower.
Akene, a small dry, 1-seeded fruit which does not split at maturity.
Alternate, said of leaves when only one from each node.
Annual, a plant which completes its life-history and dies within a year.
Anther, the pollen-bearing part of a stamen.
Apex, the free end or tip.
Appressed, flattened or pressed against another body.
Awn, a bristle.
Axil, the angle between a leaf and a stem.
Axile, borne on the axis.
Axillary, borne in an axil.
Axis, a central support.

Basal, situated at the base.
Beaked, tipped with a point.
Biennial, a plant which completes its life-history and dies within 2 years.
Blade, the expanded part of an organ as a leaf or a petal.
Bloom, a waxy coating.
Bract, a modified or much reduced leaf in a flower-cluster.
Bractlet, a very small modified leaf at the base of a flower or on its pedicel.
Bulb, a compact, mostly underground cluster of fleshy leaves on a short stem, for food storage and propagation.
Bulblet, a small bulb, sometimes produced in unusual places on the plant, as the leaf axils.

Callous, a thickened, hardened part.
Calyx, the outer set of parts in a complete flower, consisting of separate or more or less united sepals, used for protection.
Capsule, a dry compound fruit, splitting at maturity.
Carpel, a single simple pistil, or a single unit of a compound pistil. The number of carpels can generally be determined by the number of placentae, or the number of compartments in a pistil, or the number of styles and stigmas. The blending of parts in a compound pistil tends to obscure this point.
Catkin, a scaly spike of flowers, generally drooping, which in the case of staminate flowers falls after pollination.
Cell, (in an ovary), a compartment.
Chaffy, scale-like.
Chlorophyll, the green coloring matter of plants.
Clawed, having a narrow base.
Cleft, cut about to the middle.
Column, in the orchid family the organ formed of the united stamens and styles, in the center of the flower.
Compound, said of an inflorescence when it is branched; of a pistil when it consists of more than one carpel; of a leaf when it is divided into leaflets.
Coniferous, referring to fir, pine, or other conifers.
Constricted, narrowed.

Corm, a bulb-like fleshy stem or stem base, generally underground, for the purpose of food storage and propagation.
Corolla, the set of parts second from the outside in a complete flower, consisting of separate or more or less united petals, used for protection to the stamens and pistils, and to attract insects.
Corymb, a flat-topped cluster of flowers due to pedicels of unequal length, in which the outer flowers blossom first.
Crest, a ridge or projection.
Crested, bearing a ridge or projection.
Cyme, a flower cluster in which the central flower blossoms first.

Deciduous, falling after maturity; or said of plants whose leaves fall after maturity.
Decumbent, lying on the ground at the base, but rising at the tip.
Dilated, broadened.
Disk, an enlargement of the stem around the base of the pistil.
Disk-flower, the tubular flower in members of the sunflower family.
Divided, cut nearly to the base or the mid-rib.
Down, a covering of minute hairs.
Drupe, a fruit like the plum or cherry with a fleshy outer part and a stony inner part enclosing the seed.
Drupelet, a minute drupe forming a unit of an aggregate fruit, as in a blackberry.

Entire, not cut or toothed.
Exserted, projecting.

Fertile, capable of performing its function, as a stamen or pistil.
Fibrous, consisting of fibers.
Filament, the stalk-like part of a stamen which bears the anther.
Foliage leaves, the green leaves of a plant.
Follicle, a simple pistil which splits on one side at maturity.
Free-central, that form of placenta which consists of a column arising from the base of the ovary and bearing the seeds.
Fruit, a ripened ovary, together with any other parts which may develop with it.

Gelatinous, jelly-like.
Gland, a small secreting body, or a similar body which does not secrete.
Glandular, bearing glands, generally sticky.
Glaucous, covered with a waxy or powdery substance.

Hastate, arrow-shaped, with the basal lobes pointing outward.
Head, a close compact cluster of flowers, technically one in which the lateral flowers blossom first.
Herb, a plant whose stem above ground dies at the end of the season's growth.

Inferior, said of an ovary which is below the apparent attachment of the calyx.
Inflated, swollen or bladder-like.
Inflorescence, the flower arrangement or a flower cluster.
Involucre, a circle of bracts at base of a flower cluster.

Lanceolate, broadest near base and gradually tapering to apex.
Lance-shaped, lanceolate.
Lateral, at the side.
Leaflet, a leaf-like division of a compound leaf.
Linear, very narrow, with parallel sides.
Lip, one of the parts of a 2-lipped corolla.
Lobe, a shallow, generally rounded, division of a leaf or other organ.
Lobed, cut into shallow segments.

Margin, edge.
Membranous, thin and more or less transparent.
Mucronate, with a short straight point at the tip.

Node, the place on a stem which normally bears a leaf.
Nomenclature, a system of naming plants or animals.
Nutlet, a minute nut.

Oblanceolate, widest near apex, tapering gradually to base, several times longer than wide.
Obovate, widest near apex, narrowing rather abruptly to base.
Obtuse, rounded.
Ovary, the seed-bearing part of a pistil.
Ovate, broadest near base, narrowing rather abruptly to apex.
Ovoid, egg-shaped.
Ovule, an immature seed.

Palmate, spreading like the fingers from the palm.
Panicle, a branched raceme or corymb.
Pappus, the bristles, hairs, scales, etc., found on the fruits of the sunflower family; the modified calyx.
Parasite, a plant which secures its food from a living plant or animal, and therefore is without chlorophyll.
Parietal, on the wall or side.
Parted, cut to below the middle but not to the base or midrib.
Pedicel, the stalk of a single flower.
Pedicelled, said of a flower having a stalk.
Peduncle, the stalk of a flower cluster.
Peltate, having the stalk attached on the under side near the middle, umbrella-like.
Pendent, hanging.
Pendulous, hanging.
Perennial, a plant which lives and fruits year after year.
Perfect, having both stamens and pistils in the same flower.
Perianth, the sepals and petals collectively, particularly applied when these are similar.
Persistent, remaining after flowering.
Petal, a unit of the corolla, generally colored.
Petiole, the stalk of a leaf.
Petioled, said of a leaf having a stalk.
Pinnate, arranged along the sides of an axis like the parts of a feather.
Pistil, the central organ of a perfect flower, consisting of ovary, style, and stigma.
Pistillate, bearing pistils but no stamens.
Placenta, that part of the ovary to which the seeds are attached.
Placentae, plural of placenta.
Plumose, feathery.
Pollen, the powdery substance borne on the anther of the stamen.
Procumbent, lying on the ground.
Pungent, sharp.

Raceme, a flower cluster in which the flowers are borne along a stem on individual stalks about equal in length, the lateral flowers blossoming before the terminal.
Rachis, the axis of a flower-cluster or of a compound leaf.
Ray-flowers, the flowers in the sunflower family having strap-like corollas.
Receptacle, that part of the stem to which a flower is attached.
Reflexed, turned abruptly backward.
Recurved, curved backward.
Regular, said of flower when all the petals or all the sepals are of the same size and shape.
Resinous, gummy.
Rhizome, an underground (or under water) perennial stem which is generally prostrate, and sends new shoots above ground each year, and roots below.
Rootstock, a rhizome.

Samara, a winged fruit which does not split at maturity.
Saprophyte, a plant which secures its food from dead plant or animal substances and is therefore without chlorophyll.
Scale, a small thin modified leaf, generally not at all green.
Scar, a mark left after the falling of a leaf or other organ.
Scorpoid, coiled or curved inward.
Sepal, a unit of the calyx, generally green.
Sensitive, closing at a touch.
Sessile, without a stalk.
Sheath, part of a leaf which enfolds the stem.
Sheathing, enfolding the stem.
Shrub, a woody plant smaller than a tree, and generally without a pronounced trunk.
Simple, unbranched or undivided, or (in case of a pistil) consisting of a single carpel.
Solitary, only one in a place.
Spadix, a spike with a fleshy axis.
Spathe, a large bract enclosing a flower cluster, generally a spadix.
Spike, a dense raceme.
Spur, a hollow projection.
Spurred, extended into a spur.
Stamen, the pollen-bearing organ of a flower, consisting of anther and filament.
Staminate, having stamens but no pistils.
Sterile, not capable of performing its normal function, as a stamen or pistil; not producing flowers, as a shoot.
Stigma, the pollen-receiving part of the pistil.
Stipule, appendages of the leaf borne in pairs at the base of the petiole.
Stolon, a runner or sucker which roots at the nodes.
Style, the stem-like part of the pistil between the ovary and the stigma.
Submerged, growing under water.
Subtended by, bearing at its base.
Succulent, fleshy, full of water.
Superior, said of an ovary which is borne above the attachment of the calyx.
Symmetrical flower, one having the same number of parts in each circle.

Tap-root, the main descending root, forming a direct continuation of the stem.
Tawny, brownish-yellow.
Tendril, a slender coiling stem or modified leaf or portion of a leaf by which a climbing plant supports itself.
Terminal, at the end.
Ternate, divided into threes.
Throat, the upper expanded portion of a corolla tube.
Trailing, lying on the ground or over other plants, but not rooting at the nodes.
Translucent, nearly transparent.
Tuber, a short thickened part of an underground stem used for food storage.
Two-lipped, said of an irregular calyx or corolla which has distinct upper and lower divisions.

Umbel, a flat-topped flower cluster whose branches arise from the same place.
Ultimate segments, those formed by the last division of a several-times cleft leaf.

Valves, the parts into which a fruit splits at maturity.
Vascular bundles, the fiber-like strands of cells in plants which carry raw materials and food. The veins in a leaf.
Veins, the ribs in a leaf.
Vine, any plant with trailing, climbing, or running stems.

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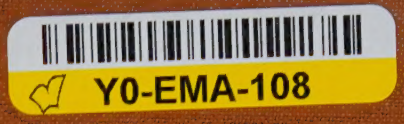
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